Business
Services

Guide for BTIP and Business Talk SIP services Microsoft

Skype for Business 2015

Skype for Business 2019

7 december 2021

Skype for Business 2019/AudioCodes/Ribbon Checklist 1.3
AudioCodes FAX Checklist 1.2
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Cloud Connector Edition AudioCodes Checklist 2.0

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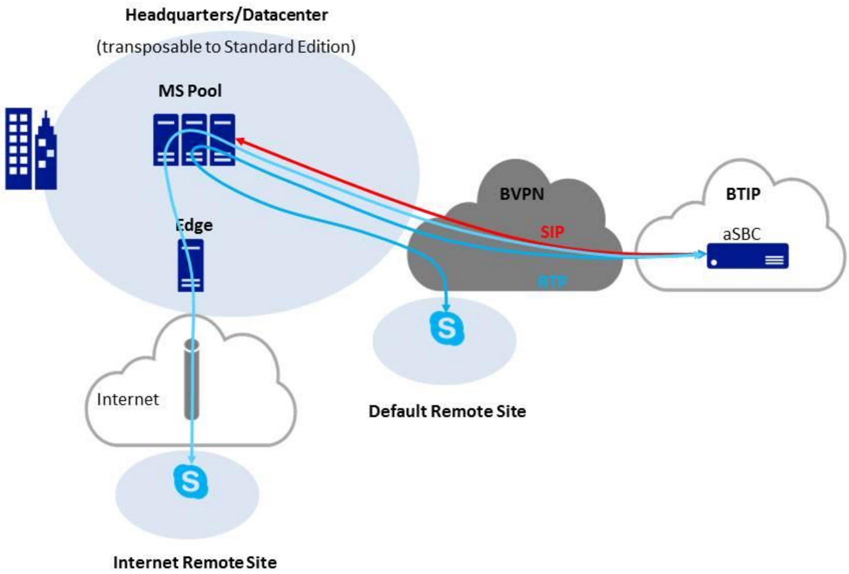
1 Main certified architectures

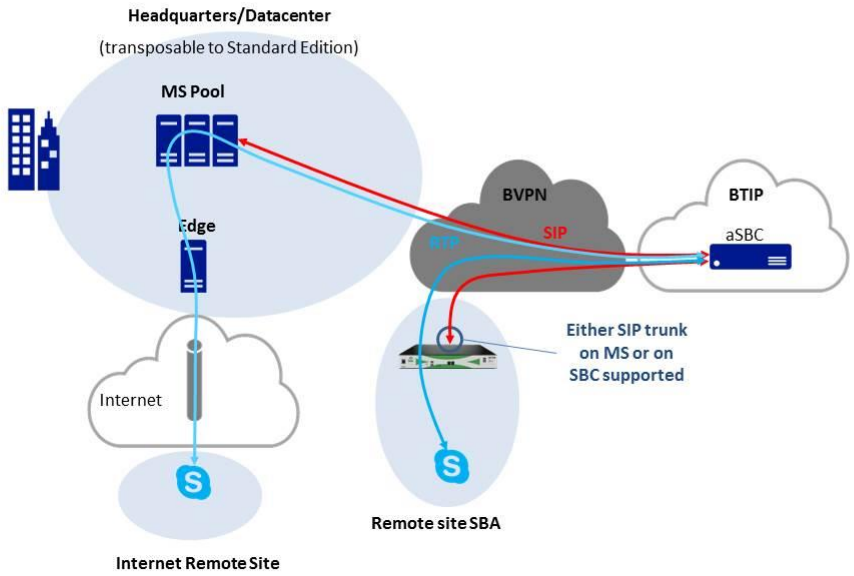
1.1 Skype for Business 2015/2019 on premises

1.1.1 Centralized architecture

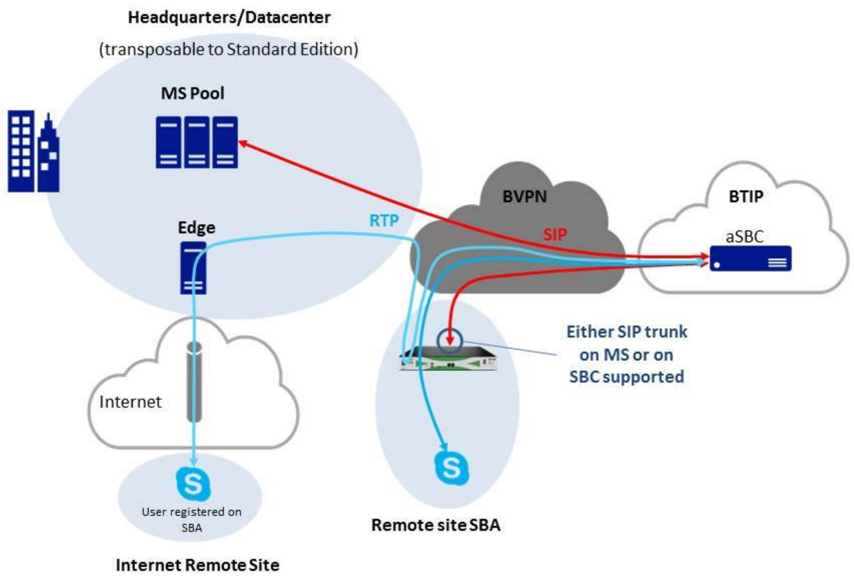


1.1.2 Remote site "SBA"

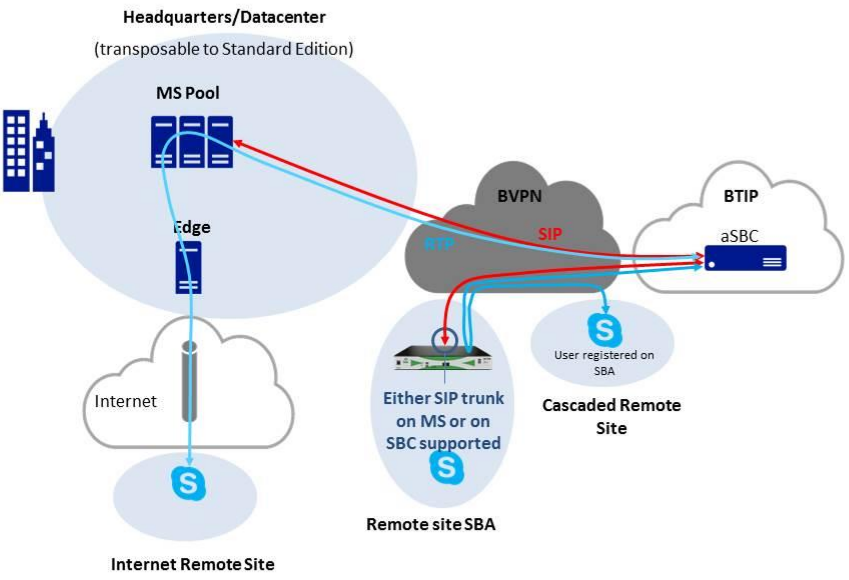
Example 1



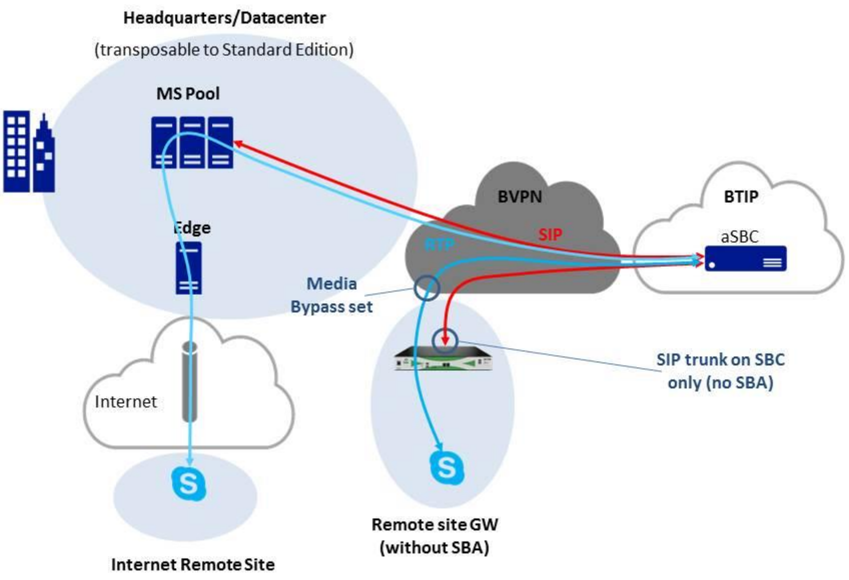
Example 2



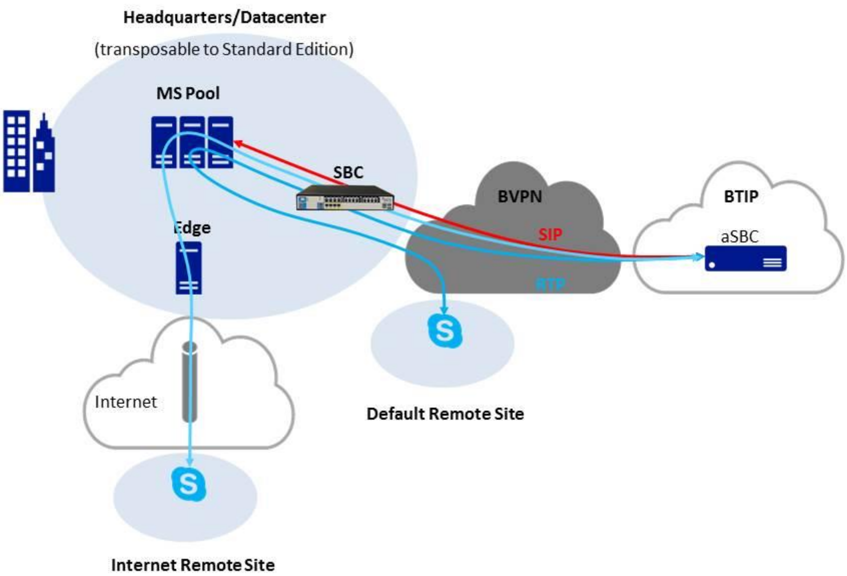
1.1.3 “Cascaded” remote site



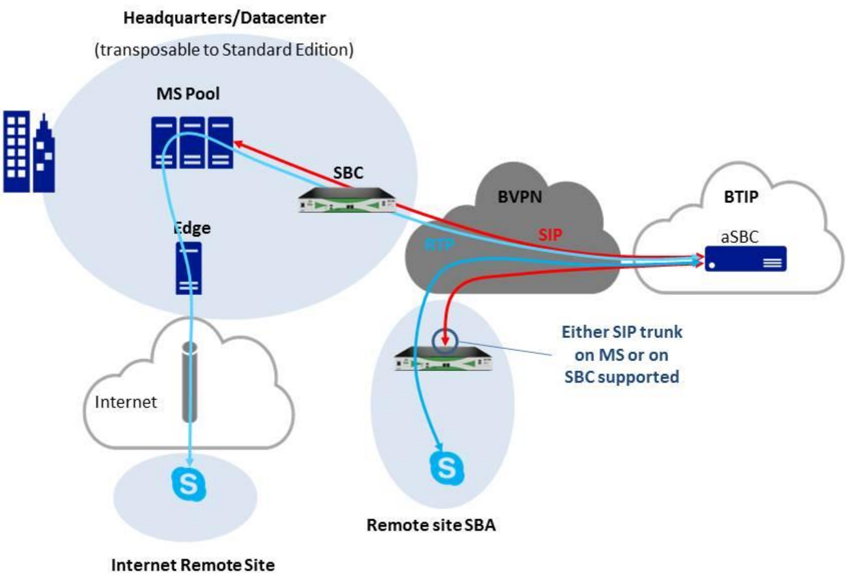
1.1.4 Remote site “GW”



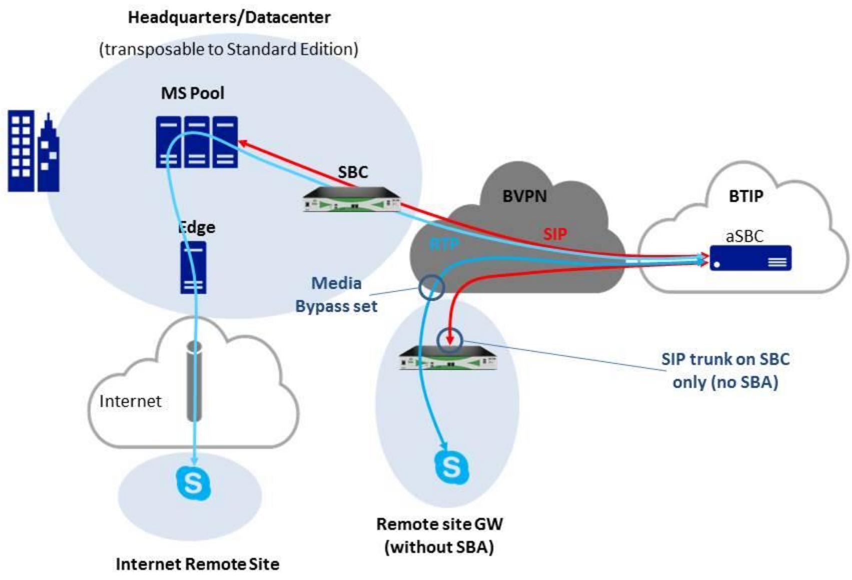
1.1.5 Centralized architecture with central SBC



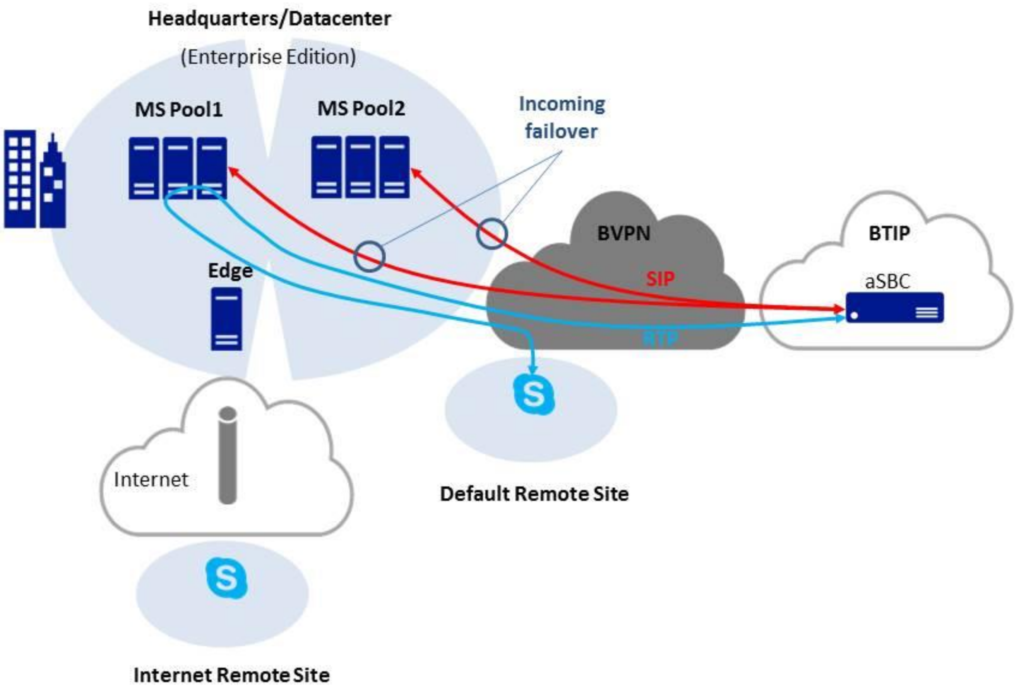
1.1.6 Remote site “SBA” and central site with central SBC



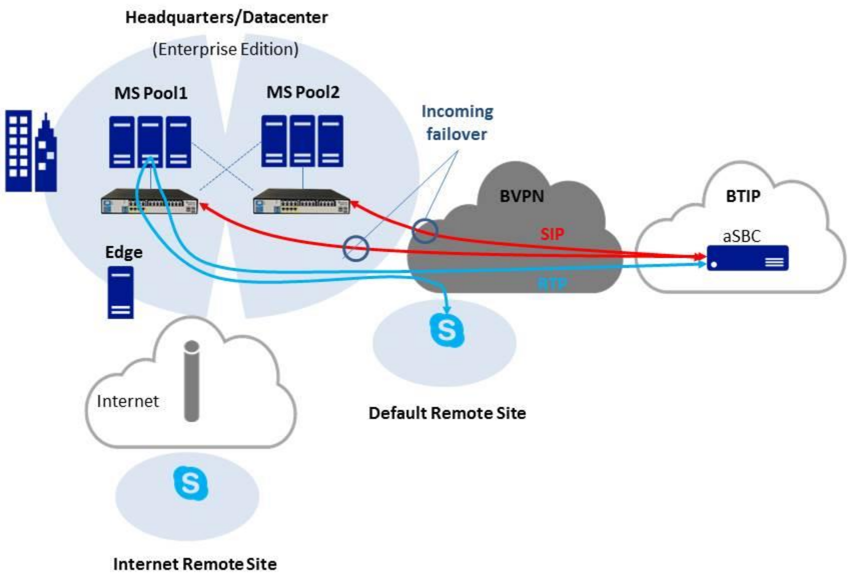
1.1.7 Remote site "GW" and central site with central SBC



1.1.8 2-pool centralized architecture



1.1.9 2-pool architecture with central SBC (Customer specific)

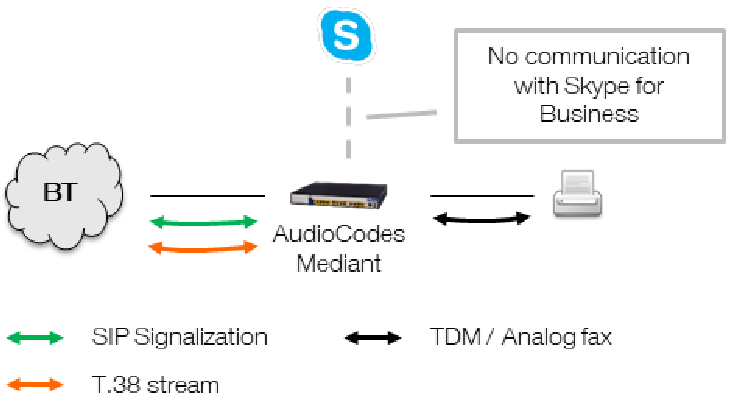


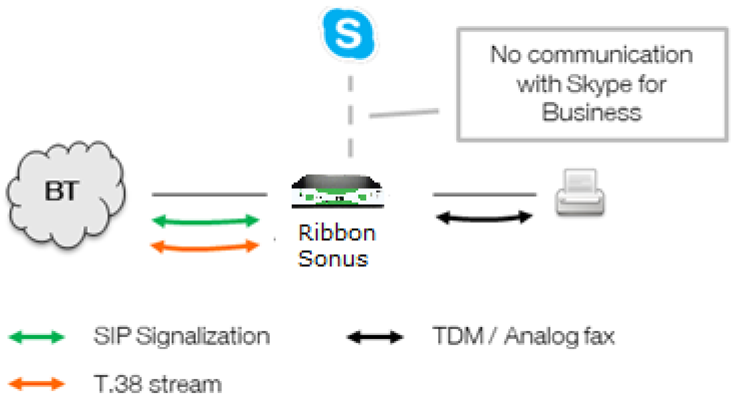
1.1.10 FAX

FAX on AudioCodes GW with or without Media Pack GW is certified both on French (BTIP) and International (BTalk) scopes. FAX protocol is T.38.

Fax calls to and from Business Talk consumes the same SIP Trunk which is used for regular voice call. Standard calls are always sent through Skype for Business to apply routing rules. When call is made from fax or to fax Mediant applies direct routing with Business Talk bypassing Skype for Business.

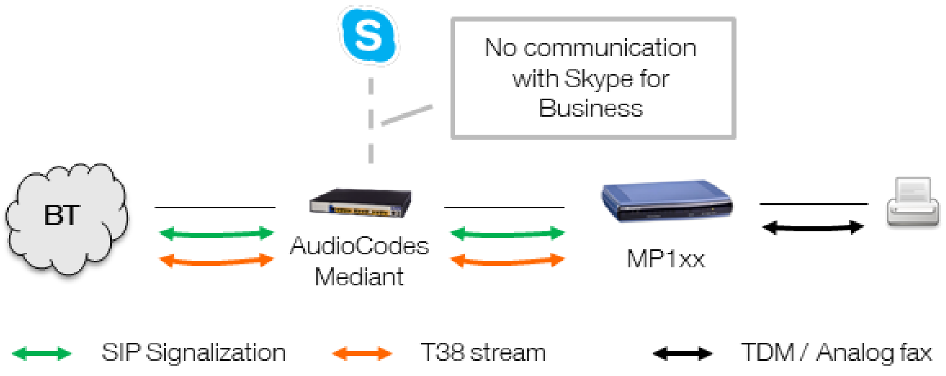
1.1.10.1 FAX directly connected on AudioCodes Mediant or Ribbon





The analog fax device can be connected directly to the gateway FXS ports. Call is routed directly between Business Talk / Business Talk IP and fax without Skype for Business involvement.

1.1.10.2 FAX connected to a MP1xx cascaded behind AudioCodes Mediant



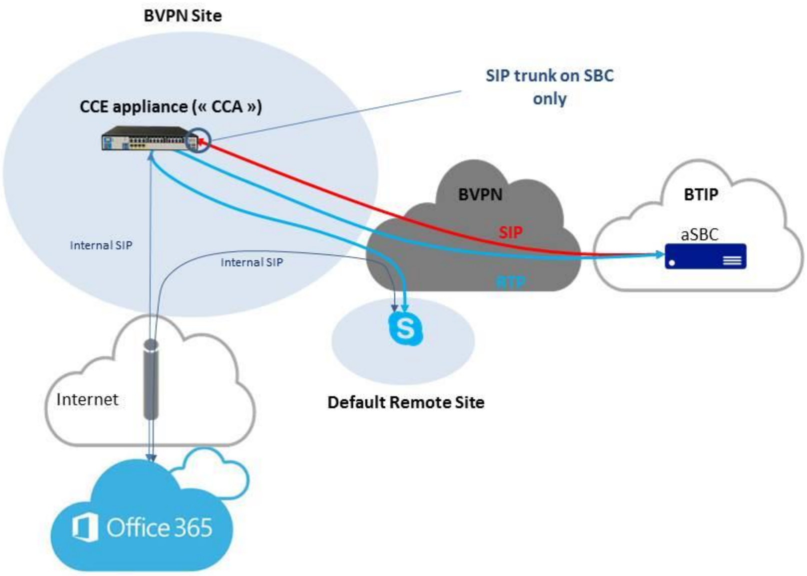
In this architecture fax device is connected to AudioCodes MediaPack 1xx analog telephony adapter. MediaPack is integrated with Mediant which can be placed in other remote site or in datacenter. Mediant gateway with no directly connected endpoints can be virtualized.

Same as in previous architecture call is routed directly between Business Talk / Business Talk IP and fax without Skype for Business involvement.

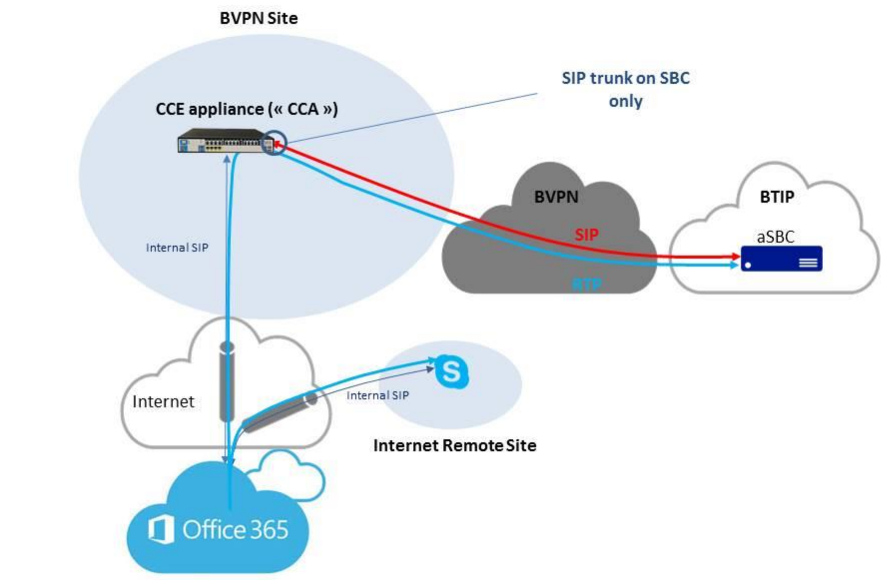
1.2 Skype for Business Online

1.2.1 Standalone mode

Example 1 – offnet call from a BVPN remote site

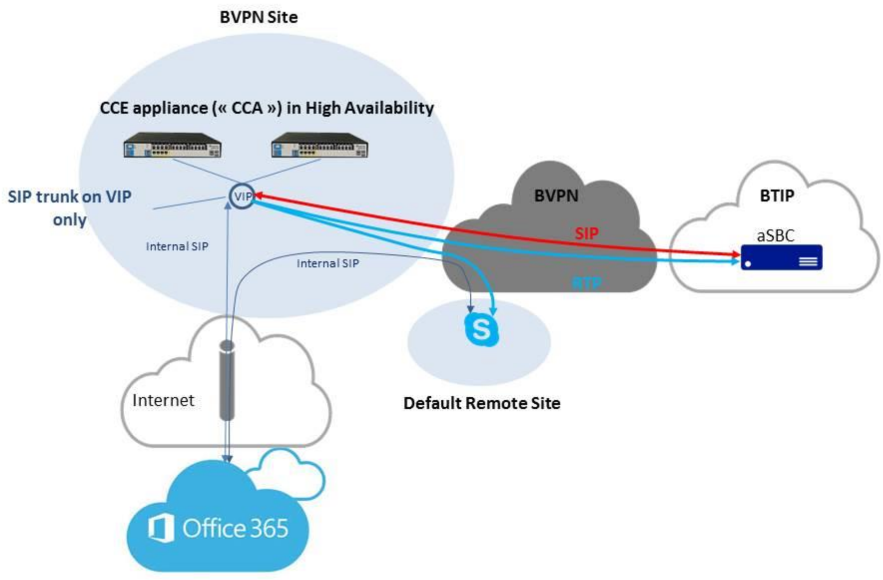


Example 2 – offnet call from an Internet remote site



1.2.2 Redundant architectures

Example: high-availability



Round-Robin & Nominal/Backup also certified

2 Parameters for connection to BTIP/BTalk

2.1 On-premise architectures

Head Quarter (HQ) architecture	Level of Service	@IP used by the service	
Standard Edition Enterprise Edition	No redundancy	MS IP@	
Standard Edition pairing 100% users on nominal	Local Server redundancy with database replication 2 Mediation Servers (MS1, MS2)	MS1 IP@	MS2 IP@
2x Standard Edition Pairing 50% users registered on nominal of each pair	Offers the same Level Of Service as 1xSE Pairing, but increases the capacity 2 Mediation Servers (MS) per pair. Round robin between pairs from incoming calls, even in case of loss of one SE Pair1 : MS1+MS2 Pair2 : MS3+MS4	MS1 IP@ MS3 IP@	MS2 IP@ MS4 IP@
Enterprise Edition	Load balancing (one pool) Single pool of Y Mediation Servers (MS) on the same site (Y>1)	MS1 IP@ … MSY IP@	
Enterprise Edition	- Local pool redundancy: - 2 Pools of Y and Y' Mediation Servers (MS) on the same site (Y>=1, Y'>=1) OR - Geographical pool redundancy (same region) - 2 Pools of Y and Y' Mediation Servers (MS), each Pool hosted by different sites (Y>=1, Y'>=1)	Pool1_MS1 IP@ … Pool1_MSY IP@	Pool2_MS1 IP@ … Pool2_MSY' IP@
Central trunk with central SBC	No redundancy SBC without SBA on HQ acting as a customer SBC for HQ SIP trunk only	SBC IP@	

Remote Site (RS) architecture	Level of Service	@IP used by the service
Default remote site	No survivability, no trunk redundancy	N/A
Remote site with Mediation Server	No hairpinning through central site Functionning mode: - users remain registered to HQ - SIP trunk is handled by local MS - Nominal ougoing and incoming traffic goes through MS	MS IP@
Remote site with Gateway-SBA (Survivability Branch Appliance) or SBS (Survivability Branch Server)	- Remote survivability for the site hosting the Gateway-SBA or SBS Functionning mode: - SIP trunk is handled by SBA (not SBC part) or SBS - Nominal ougoing and incoming traffic goes through SBA/SBS - In Case of SBA/SBS crash or Local SIP Trunk connectivity loss to a-SBC, remote site phones will re-register on HQ and attempt to use the HQ trunk for incoming and outgoing traffic	SBA MS or SBS MS IP@
Remote site with Gateway-SBA (Survivability Branch Appliance)	- Remote survivability for the site hosting the Gateway-SBA Functioning mode: - SIP trunk is handled by a-SBC part of the appliance (not MS part) - Nominal outgoing and incoming traffic goes through a-SBC - In case of SBA/SBS crash or Local SIP Trunk connectivity loss to a-SBC, remote site phones will re-register on HQ and attempt to use the HQ trunk for incoming and outgoing traffic	SBC IP@
Remote site of "RS-GW" type (Gateway without SBA module)	- Allows local users to use local trunk though they are registered on central HQ (Microsoft "Media-Bypass" feature set locally) - Save bandwidth on central HQ	
Remote site cascaded to Remote site with Gateway-SBA or SBS	Allows hairpinning through the closest SBA/SBS instead of through HQ	N/A

2.2 Cloud Connector Edition architectures

<table>
<tr><th>Head Quarter (HQ) architecture</th><th>Level of Service</th><th colspan="2">@IP used by the service</th></tr>
<tr><td>CCE with SBC - Trunk on SBC</td><td>No redundancy</td><td colspan="2">SBC IP@</td></tr>
<tr><td>Dual CCE-SBC - Trunk on SBC - High Availability with single @IP</td><td>Redundancy with load balancing behavior</td><td colspan="2">SBCs virtual IP@</td></tr>
<tr><td>Dual CCE-SBC - Trunk on SBC - Resiliency</td><td>Redundancy with nominal/backup behavior</td><td>SBC1 IP@</td><td>SBC2 IP@</td></tr>
</table>

2.3 Real Time Voice (RTVo) classification

In Business VPN, voice flows are classified either by using “Access Control Lists” on CE routers or by trusting DSCP configuration of voice endpoints. “DSCP trust” is intended to become the main way of managing QoS. Therefore, take care to have the following DSCP values configured on your equipment:

- Voice media: **46** (= EF) *!! mandatory !!*
- Video media: **26** (=AF31) or **34** (= AF41)
- Signaling: : **24** (=CS3) or **26** (=AF31) or **40** (= CS5) or **46** (= EF)

Note that our configuration guidelines below include this configuration for:

- Mediation Server
- AudioCodes SBC
- Ribbon SBC
- Front End Server
- Edge Server
- Skype for Business Client

For unknown clients (some hardphones for instance), recommendation is made to properly configure them according to their guidelines.

3 BTIP/BTalk certified versions

3.1 Skype for Business 2015

Certified Skype for Business 2015 Cumulative Update:

- CU March 2019

Certified Skype for Business 2015 Cumulative Updates with Limited Support (vendor End of Sales):

- CU January 2019
- CU December 2017
- CU May 2017
- CU June 2016
- CU March 2016
- CU November 2015
- RTM

Associated SBC:

- Ribbon SBC 1000/2000 & Swe Lite 8.0
- Ribbon SBC 1000/2000 7.0
- Sonus (Ribbon) SBC 1000/2000 6.1
- Sonus (Ribbon) SBC 1000/2000 6.0.1 build 441
- Sonus (Ribbon) SBC 1000/2000 5.0.1 build 399
- AudioCodes M800/1000/2600/4000/9000 & VE 7.20A
- AudioCodes M800/1000 7.00A

3.2 Skype for Business 2019

Certified Skype for Business 2019 Cumulative Update:

- CU July 2019

Associated SBC:

- Ribbon SBC 1000/2000 & Swe Lite 8.0
- AudioCodes M800/1000/2600/4000/9000 & VE 7.20A

3.3 Cloud Connector Edition

Certified devices and software:

- Mediation Server 6.0.9319.410

- CCE AudioCodes appliance (Wizard version) V2.1.0.19
- CCE AudioCodes Mediant software 7.2

Cloud Connector Edition is no longer supported for new deployments. Consider Microsoft Teams instead.

4 Skype for Business 2015/2019 with or without Ribbon/AudioCodes Configuration Checklist

4.1 Skype server configuration checklist

The checklist below presents all steps of configuration required for VISIT SIP Skype for Business offer deployment.
The configuration checklist order respects the configuration guideline chapters for more information about the order please refer to [2]

Menu	Value
Skype for Business Configuration (Topology Builder)	
On the Topology builder interface: ✓ Central Site > skype for business 2019 > **Mediation Pools**, right click and Edit properties	**Enable TCP** port has to be **checked** **Listening port** has to be set to **5060** for each Mediation Server in skype for Business topology
On the Topology builder interface: ✓ Central Site > Skype for Business 2019 > Shared components > Trunks, right click edit properties	**FQDN** of **nominal aSBC** for BT/BTIP traffic Specify **nominal aSBC BT/BTIP trunk name** Listening port for IP/PSTN gateway**: 5060** SIP Transport protocol: **TCP** Associated Mediation Server: **Mediation Server FQDN** Associated Mediation Server port: **5060**
On the Topology builder interface: ✓ Central Site > Skype for Business 2019 > Shared components > Trunks, right click edit properties	**FQDN** of **backup aSBC** for BT/BTIP traffic Specify **backup aSBC BT/BTIP trunk name** Listening port for IP/PSTN gateway**: 5060** SIP Transport protocol: **TCP** Associated Mediation Server: **Mediation Server FQDN** Associated Mediation Server port: **5060**
Skype for Business Configuration (Control Panel)	
Dial Plan On the Skype for Business Server Control Panel Interface: ✓ Voice Routing > Dial Plan	Type: **Dial Plan** type Name: **Dial Plan** name
Voice Policy On the Skype for Business Server Control Panel Interface: ✓ Voice Routing > Voice Policy	Name: **Voice Policy** name Enable call park: **Checked** Enable PSTN reroute: **Unchecked**
PSTN usage On the Skype for Business Server Control Panel Interface: ✓ Voice Routing > Voice Policy	New PSTN Usage record Name: **BT/BTIP PSTN Usage name**
Routes (aSBC nominal route) On the Skype for Business Server Control Panel Interface: ✓ Voice Routing > Voice Policy	Edit PSTN Usage record Associated routes → New Name: **aSBC nominal Route name** Associated Trunks → Add **Select** corresponding **aSBC nominal Trunk**

Menu	Value
	from drop down list
Routes (aSBC backup route) On the Skype for Business Server Control Panel Interface: ✓ Voice Routing > Voice Policy	Edit PSTN Usage record Associated routes → New Name: **aSBC backup Route name** Associated Trunks → Add **Select** corresponding **aSBC backup Trunk** from drop down list
Trunk configuration On the Skype for Business Server Control Panel Interface: ✓ Voice Routing > Trunk configuration	New Name: **BT/BTIP Trunk name** Encryption support level : **Optional** Refer support : **None** Enable forward call History : **Checked**
Trunk configuration (SFB PowerShell) On the Skype for Business PowerShell Interface: ✓ ***Set-CsTrunkConfiguration –Identity <Site> –RTCPActiveCalls $False*** ✓ ***Set-CsTrunkConfiguration –Identity <Site> –RTCPCallsOnHold $False***	**-Site:** The name of the site
4.1.1 QoS configuration	
Enabling QoS for systems other than Windows On the Skype for Business PowerShell Interface: ✓ ***Set-CsMediaConfiguration -Identity <Site> -EnableQoS $True -EnableInCallQoS $True***	**Site:** The name of the site
Port configuration for Conferencing, Application and Mediation servers ✓ ***Set-CsConferenceServer -Identity ConferencingServer: <Site> -AudioPortStart <Port Start> -AudioPortCountt <Port Count>*** ✓ ***Set-CsConferenceServer -Identity ConferencingServer: <Site> -VideoPortStart <Port Start> -VideoPortCount <Port Count>*** ✓ ***Set-CsConferenceServer -Identity ConferencingServer: <Site> -ApplicationSharingPortStart <Port Start> -ApplicationSharingPortCount <Port Count>*** ✓ ***Set-CsApplicationServer -Identity ApplicationServer: <Site> -AudioPortStart <Port Start> - AudioPortCount <Port Count>*** ✓ ***Set-CsMediationServer -Identity MediationServer: <Site> -AudioPortStart <Port Start> - AudioPortCount <Port Count>***	**Site:** The name of the site **Port Start:** First port in the range **Port Count:** Number of ports in the range **Values:** AudioPortStart, AudioPortCount: (49152,8348) VideoPortStart, VideoPortCount: (57501,8034) ApplicationSharingPortStart, ApplicationSharingPortCount: (49152,16383)
QoS policy configuration for Conferencing, Application and Mediation servers On the AD computer: ✓ Group Policy Management Console > Container linked to S4B OU > Edit > Group Policy Management Editor > Policies > Windows Settings > Policy Based QoS > Create new policy **After applying policies refresh Group Policy** On the Skype for Business PowerShell Interface: ✓ ***Gpupdate.exe /force***	**S4B-Audio:** Protocol: TCP and UDP Source Port: 49152:57500 DSCP value: 46 **S4B-Video:** Protocol: TCP and UDP Source Port: 57501:65535 DSCP value: 34 **S4B-SignalingSRC:** Protocol: TCP Source Port: 5060:5069

Menu	Value
	DSCP value: 24 **S4B-SignalingDST:** Protocol: TCP Destination Port: 5060:5069 DSCP value: 24
QoS policy configuration for Conferencing, Application and Mediation servers On the Edge server: ✓ Local Group Policy Editor > Computer Configuration > Policies > Windows Settings > Policy-based QoS > Create new policy **After applying policies refresh Group Policy** On the Skype for Business PowerShell Interface: ✓ ***Gpupdate.exe /force***	**S4B-Audio:** Protocol: TCP and UDP Destination Port: 49152:57500 DSCP value: 46 **S4B-Video:** Protocol: TCP and UDP Destination Port: 57501:65535 DSCP value: 34 **S4B-Signaling:** Protocol: TCP Destination Port: 5060:5069 DSCP value: 24
QoS policy configuration for S4B Clients On the Customer AD: ✓ Group Policy Management Console > container where clients Windows computers are located > Edit > Computer Configuration > Windows Settings > Policy based QoS > Create new policy **After applying policies refresh Group Policy** On the Skype for Business PowerShell Interface: ✓ ***Gpupdate.exe /force***	**S4B-Audio:** Protocol: TCP and UDP Application name: Lync.exe Source Port: 50060:50108 DSCP value: 46 **S4B-Video:** Protocol: TCP and UDP Application name: Lync.exe Source Port: 57600:57640 DSCP value: 34 **S4B-Signaling:** Protocol: TCP Application name: Lync.exe Destination Port: 5060:5069 DSCP value: 24

4.2 Ribbon SBC Edge configuration checklist

This configuration checklist will follow this color convention:

- **Green: in case of RS SBA**
- **Blue: in case of HQ with Central SBC**

### 4.2.1 Skype for Business – configutation for RS SBA or HQ with Central SBC - Trunk SIP on Ribbon SBC	
PSTN usage On the Skype for Server Control Panel Interface: ✓ Voice Routing > Voice Policy	New Ribbon SBC BT/BTIP PSTN Usage record Name: Ribbon SBC **BT/BTIP PSTN Usage**

Menu	Value
	name
Route (Ribbon SBC BT/BTIP) On the Skype for Business Server Control Panel Interface: ✓ Voice Routing > Voice Policy	Edit PSTN Usage record Associated routes → New Name: **Ribbon SBC for BT/BTIP route name** Associated Trunks → Add **Select** corresponding **Ribbon SBC Trunk** from drop down list
Trunk configuration On the Skype for Business Server Control Panel Interface: ✓ Voice Routing > Trunk configuration	New Name: **Ribbon SBC for BT/BTIP Trunk name** Encryption support level : **Optional** Refer support : **None** Enable forward call History : **Checked**
Trunk configuration (SFB PowerShell) On the Skype for Business PowerShell Interface: ✓ ***Set-CsTrunkConfiguration –Identity <Site> –RTCPActiveCalls $False*** ✓ ***Set-CsTrunkConfiguration –Identity <Site> –RTCPCallsOnHold $False***	**-Site:** The name of the remote site
Ribbon SBC BT/BTIP configuration	
SIP Profile	
On the Ribbon SBC WebUi Interface: ✓ Settings >SIP > SIP Profile > Default SIP Profile	Session Timer: Session Timer: **Disabled** Header Customization: UA Header: **Ribbon SBC** Calling Info Source: **RFC Standard** Options Tags: 100rel: **Supported** Update: **Supported** SDP Customization: Send Number of Channels: **True** Connection Info In Media Section: **True** Digit Transmission Preference: **RFC 2833/Voice**
Media	
On the Ribbon SBC WebUi Interface: ✓ Settings >Media > Media System Configuration	Port Range: Start Port: **16384** Number of Port pairs: **600** Echo Canceller Type Option: **Standard** Echo Cancel NLP Option: **Mild** Send STUN Packets: **Enabled** Music On Hold: Music on Hold Source: **File**
On the Ribbon SBC WebUi Interface: ✓ Settings >Media > Media Profiles	Default G711a: Codec: **G711 A-law** Payload Size: **20 ms** Default G711µ: Codec: **G711 µ-law**

Menu	Value
	Payload Size: **20 ms**
On the Ribbon SBC WebUi Interface: ✓ Settings >Media > Media List	Default Media List: Media Profiles List: **G711a** **G711µ** Crypto Profile ID: **None** Media DSCP: **46** RTCP Mode: **RTCP** Dead Call Detection: **Disabled** Silence Suppression: **Disabled**
Secondary interface (only for RS SBA)	
On the Ribbon SBC WebUi Interface: ✓ Settings >Node Interfaces > Logical Interfaces > Ethernet 1 IP	Configure Secondary Interface: **Enabled** Secondary Address: **IP address of the secondary interface of the Ribbon gateway (dedicated for BT/BTIP traffic)** Secondary Mask: **Mask corresponding to secondary interface subnet**
From/To SFB <-> Offnet routing BT/BTIP traffic	
SIP Server Table	
From/To SBA –BT/BTIP or From/To MS Pool –BT/BTIP On the Ribbon SBC WebUi Interface: ✓ Settings >SIP > SIP Server Tables > Create SIP Server	Host: **SBA or MS Pool IP address** Port: **5060** Protocol: TCP Monitor: **SIP Options**
From/To BT/BTIP-SBA or From/To MS Pool –BT/BTIP On the Ribbon SBC WebUi Interface: ✓ Settings >SIP > SIP Server Tables > Create SIP Server	1st Entry: ACME aSBC nominal Host: **ACME aSBC nominal IP address** Port: **5060** Protocol: TCP Monitor: SIP Options 2nd Entry: ACME aSBC backup Host: ACME aSBC backup IP address Port: 5060 Protocol: TCP Monitor: SIP Options
Transformation Rules	
SBA to BT/BTIP or MS Pool to BT/BTIP On the Ribbon SBC WebUi Interface: ✓ Settings >Transformation > New Transformation Table > New Transformation Entry	Calling Entry: Input Field Type: **Calling Address/Number** Input Field Value: depend on transformation need Output Field Type: Calling Address/Number Output Field Value: depend on transformation need Called Entry: Input Field Type: **Called Address/Number** Input Field Value: depend on transformation need Output Field Type: Called Address/Number Output Field Value: depend on transformation need

Menu	Value
BT/BTIP to SBA or BT/BTIP to SBA On the Ribbon SBC WebUi Interface: ✓ Settings >Transformation > New Transformation Table > New Transformation Entry	Calling Entry: Input Field Type: **Calling Address/Number** Input Field Value: depend on transformation need Output Field Type: Calling Address/Number Output Field Value: depend on transformation need Called Entry: Input Field Type: **Called Address/Number** Input Field Value: must normalize received number on Skype for Business E.164 number format Output Field Type: Called Address/Number Output Field Value: depend on transformation need
Call Routing Tables	
From SBA or From MS Pool On the Ribbon SBC WebUi Interface: ✓ Settings >Call Routing Table > Create	**SBA to BT/TIP** or **MS Pool to BT/TIP** entry: Description: **SBA to BT/BTIP or MS pool to BT/BTIP** Route Priority: **1** Number/Name Transformation Table: SBA to BT/BTIP or MS Pool to BT/BTIP Destination Signalling Group: (SIP) From/To BT/TIP-SBA or From/To BT/TIP-SBA Media Transcoding: Enabled (If licenced)
From BT/BTIP On the Ribbon SBC WebUi Interface: ✓ Settings >Call Routing Table > Create	**BT/TIP to SBA** or **BT/TIP to MS Pool** entry: Description: **BT/BTIP to SBA or BT/BTIP to MS Pool** Route Priority: **1** Number/Name Transformation Table: BT/BTIP to SBA or BT/BTIP to MS Pool Destination Signalling Group: **(SIP) From/To SBA-BT/BTIP or From/To MS Pool-BT/BTIP** Media Transcoding: **Enabled** (If licenced)
Signaling Groups	
(SIP) From/To SBA – BT/BTIP or From/To MS Pool – BT/BTIP On the Ribbon SBC WebUi Interface: ✓ Settings >Signaling Group > SIP Signaling Group	Description: **SIP From/To SBA – BT/BTIP or From/To MS Pool – BT/BTIP** Call Routing Table: **From SBA or From MS Pool** SIP Server Table: From/To SBA –BT/BTIP or MS Pool –BT/BTIP Signalling/Media Source IP :Ribbon BT/BTIP interface IP address Listen Ports:5060 /TCP Federated IP/FQDN: SBA or MS Pool FQDN Signaling DSCP: 24

Menu	Value
(SIP) From/To BT/BTIP-SBA or From/To BT/BTIP-MS Pool On the Ribbon SBC WebUi Interface: ✓ Settings >Signaling Group > SIP Signaling Group	Description: **SIP From/To BT/BTIP-SBA or From/To BT/BTIP-MS Pool** Call Routing Table: **From BT/BTIP** SIP Server Table: From/To BT/BTIP -SBA or From/To BT/BTIP-MS Pool Signalling/Media Source IP: Ribbon BT/BTIP interface IP address Listen Ports:5060 /TCP Federated IP/FQDN: ACME aSBC nominal IP address ACME aSBC backup IP address Signaling DSCP: 24
From/To SFB <-> Offnet routing E1/T1 traffic (only for RS SBA)	
System Companding Law	
On the Ribbon SBC WebUi Interface: ✓ Settings >System > System companding law	Companding law: **A-Law**
SIP Server Table	
From/To SBA –PSTN On the Ribbon SBC WebUi Interface: ✓ Settings >SIP > SIP Server Tables > Create SIP Server	Host: **SBA IP** Port: example **5060 (must be the same as defined on Skype for Business topology builder)** Protocol: TCP Monitor: **SIP Options** Note: If using same protocol and port as BT/BTIP the same SIP Server table can be used
Transformation Rules	
SBA to PSTN On the Ribbon SBC WebUi Interface: ✓ Settings >Transformation > New Transformation Table > New Transformation Entry	Calling Entry: Input Field Type: **Calling Address/Number** Input Field Value: depend on transformation need Output Field Type: Calling Address/Number Output Field Value: depend on transformation need Called Entry: Input Field Type: **Called Address/Number** Input Field Value: depend on transformation need Output Field Type: Called Address/Number Output Field Value: depend on transformation need
PSTN to SBA On the Ribbon SBC WebUi Interface: ✓ Settings >Transformation > New Transformation Table > New Transformation Entry	Calling Entry: Input Field Type: **Calling Address/Number** Input Field Value: depend on transformation need Output Field Type: Calling Address/Number Output Field Value: depend on transformation

Menu	Value
	need Called Entry: Input Field Type: **Called Address/Number** Input Field Value: must normalize received number on Skype for Business E.164 number format Output Field Type: Called Address/Number Output Field Value: depend on transformation need
Call Routing Tables	
From SBA On the Ribbon SBC WebUi Interface: ✓ Settings >Call Routing Table > Create	SBA to PSTN entry: Description: **SBA to PSTN** Route Priority: **1** Number/Name Transformation Table: SBA to PSTN Destination Signalling Group: (ISDN) From/To PSTN-SBA Media Transcoding: Enabled (If licenced)
From PSTN On the Ribbon SBC WebUi Interface: ✓ Settings >Call Routing Table > Create	PSTN to SBA entry: Description: **PSTN to SBA** Route Priority: **1** Number/Name Transformation Table: PSTN to SBA Destination Signalling Group: **(SIP) From/To SBA-PSTN** Media Transcoding: **Enabled** (If licenced)
Signaling Groups	
(SIP) From/To SBA – PSTN On the Ribbon SBC WebUi Interface: ✓ Settings >Signaling Group > SIP Signaling Group	Description: **SIP From/To SBA – PSTN** Call Routing Table: **From SBA** SIP Server Table: From/To SBA –PSTN Signalling/Media Source IP :Ribbon E1/analog interface IP address Listen Ports:5060 /TCP Federated IP/FQDN: SBA IP address
(ISDN) PSTN On the Ribbon SBC WebUi Interface: ✓ Settings >Signaling Group > Signaling Group > ISDN Signaling Group	Description: **ISDN PSTN** Switch variant: **Euro ISDN** Call Routing Table: **From PSTN**
From/To SFB <-> Offnet routing Analog Devices traffic	
SIP Server Table	
From/To SBA –Analog Device On the Ribbon SBC WebUi Interface: ✓ Settings >SIP > SIP Server Tables > Create SIP Server	Host: **SBA FQDN/IP address** Port: example **5060 (must be the same as defined on Skype for Business topology builder)** Protocol: TCP Monitor: **SIP Options**

Menu	Value
	If using same protocol and port as BT/BTIP the same SIP Server table can be used (no need to create a new SIP Server table)
Transformation Rules	
SBA to Analog On the Ribbon SBC WebUi Interface: ✓ Settings >Transformation > New Transformation Table > New Transformation Entry	Calling Entry: Input Field Type: **Calling Address/Number** Input Field Value: depend on transformation need Output Field Type: Calling Address/Number Output Field Value: depend on transformation need Called Entry: Input Field Type: **Called Address/Number** Input Field Value: depend on transformation need Output Field Type: Called Address/Number Output Field Value: depend on transformation need
Analog Device to SBA On the Ribbon SBC WebUi Interface: ✓ Settings >Transformation > New Transformation Table > New Transformation Entry	Calling Entry: Input Field Type: **Calling Address/Number** Input Field Value: depend on transformation need Output Field Type: Calling Address/Number Output Field Value: depend on transformation need Called Entry: Input Field Type: **Called Address/Number** Input Field Value: must normalize received number on Skype for Business E.164 number format Output Field Type: Called Address/Number Output Field Value: depend on transformation need
Call Routing Tables	
From SBA On the Ribbon SBC WebUi Interface: ✓ Settings >Call Routing Table > Create	SBA to analog device entry: Description: **SBA to Analog Device** Route Priority: **1** Number/Name Transformation Table: SBA to PSTN Destination Signalling Group: (CAS) Analog Device Media Transcoding: Enabled (If licenced)
From Analog Device On the Ribbon SBC WebUi Interface: ✓ Settings >Call Routing Table > Create	Analog Device to SBA entry: Description: **Analog Device to SBA** Route Priority: **1** Number/Name Transformation Table: Analog Device to SBA Destination Signalling Group: **(SIP) From/To SBA-Analog Device** Media Transcoding: **Enabled** (If licenced)

Menu	Value
Signaling Groups	
(SIP) From/To SBA – Analog Device On the Ribbon SBC WebUi Interface: ✓ Settings >Signaling Group > SIP Signaling Group	Description: **SIP From/To SBA – Analog Device** Call Routing Table: **From SBA** SIP Server Table: From/To SBA –Analog Device Signalling/Media Source IP :Ribbon E1/analog interface IP address Listen Ports:5060 /TCP Federated IP/FQDN: SBA IP address
(CAS) Analog On the Ribbon SBC WebUi Interface: ✓ Settings >Signaling Group > SIP Signaling Group	Description: **CAS Analog** CAS Signalling Profile: **CAS Analog** Call Routing Table: **Analog to SBA** Assigned Channels: **Analog Devices information**
4.2.2 Skype for Business– configuration for Remote Site GW	
PSTN usage On the Skype for Server Control Panel Interface: ✓ Voice Routing > Voice Policy	New Ribbon SBC BT/BTIP PSTN Usage record Name: Ribbon Gateway **BT/BTIP PSTN Usage name**
Route (Ribbon SBC BT/BTIP) On the Skype for Business Server Control Panel Interface: ✓ Voice Routing > Voice Policy	Edit PSTN Usage record Associated routes → New Name: **BT/BTIP Ribbon GW route name** Associated Trunks → Add **Select** corresponding **Ribbon GW Trunk** from drop down list
Trunk configuration On the Skype for Business Server Control Panel Interface: ✓ Voice Routing > Trunk configuration	New Name: **Ribbon SBC for BT/BTIP Trunk name** Encryption support level : **Optional** Refer support : **None** Enable forward call History : **Checked** Enable media bypass : **Checked**
Trunk configuration (SFB PowerShell) On the Skype for Business PowerShell Interface: ✓ ***Set-CsTrunkConfiguration –Identity <Site> –RTCPActiveCalls $False*** ✓ ***Set-CsTrunkConfiguration –Identity <Site> –RTCPCallsOnHold $False***	**-Site:** The name of the site
Ribbon GW BT/BTIP configuration	
SIP Profile	
On the Ribbon SBC WebUi Interface: ✓ Settings >SIP > SIP Profile > Default SIP Profile	Session Timer: Session Timer: **Disabled** Header Customization: UA Header: **Ribbon SBC** Calling Info Source: **RFC Standard** Options Tags: 100rel: **Supported**

Menu	Value
	Update: **Supported** SDP Customization: Send Number of Channels: **True** Connection Info In Media Section: **True** Digit Transmission Preference: **RFC 2833/Voice**
Media	
On the Ribbon SBC WebUi Interface: ✓ Settings >Media > Media System Configuration	Port Range: Start Port: **16384** Number of Port pairs: **600** Echo Canceller Type Option: **Standard** Echo Cancel NLP Option: **Mild** Send STUN Packets: **Enabled** Music On Hold: Music on Hold Source: **File**
On the Ribbon SBC WebUi Interface: ✓ Settings >Media > Media Profiles	Default G711a: Codec: **G711 A-law** Payload Size: **20 ms** Default G711µ: Codec: **G711 µ-law** Payload Size: **20 ms**
On the Ribbon SBC WebUi Interface: ✓ Settings >Media > Media List	Default Media List: Media Profiles List: **G711a** **G711µ** Crypto Profile ID: **None** Media DSCP: **46** RTCP Mode: **RTCP** Dead Call Detection: **Disabled** Silence Suppression: **Disabled**
TLS Profile	
On the Ribbon SBC WebUi Interface: ✓ Settings >Security > TLS Profiles	Create TLS Profile: TLS Protocol: **TLS 1.2 Only** Mutual Authentication: **Enabled** Allow Weak Cipher: **Disable** Handshake Inactivity Timeout: **10** The Client Cipher List is **automatically updated** to display only the ciphers supported for the selected TLS version Validate Server FQDN: **Disabled** Validate Client FQDN: **Disabled**
Secondary interface	
On the Ribbon SBC WebUi Interface: ✓ Settings >Node Interfaces > Logical Interfaces > Ethernet 1 IP	Configure Secondary Interface: **Disabled** Primary address dedicated for BT/BTIP traffic
From/To SFB <-> Offnet routing BT/BTIP traffic	
SIP Server Table	
From/To MS Pool –BT/BTIP On the Ribbon SBC WebUi Interface:	Host: **MS Pools FQDN/IP address** Port: **5067**

Menu	Value
✓ Settings >SIP > SIP Server Tables > Create SIP Server	Protocol: TLS TLS Profile: Select the TLS Profile created above Monitor: **SIP Options**
From/To BT/BTIP-MS Pool On the Ribbon SBC WebUi Interface: ✓ Settings >SIP > SIP Server Tables > Create SIP Server	1st Entry: ACME aSBC nominal Host: **ACME aSBC nominal IP address** Port: **5060** Protocol: TCP Monitor: SIP Options 2nd Entry: ACME aSBC backup Host: ACME aSBC backup IP address Port: 5060 Protocol: TCP Monitor: SIP Options
Transformation Rules	
MS Pool to BT/BTIP On the Ribbon SBC WebUi Interface: ✓ Settings >Transformation > New Transformation Table > New Transformation Entry	Calling Entry: Input Field Type: **Calling Address/Number** Input Field Value: depend on transformation need Output Field Type: Calling Address/Number Output Field Value: depend on transformation need Called Entry: Input Field Type: **Called Address/Number** Input Field Value: depend on transformation need Output Field Type: Called Address/Number Output Field Value: depend on transformation need
BT/BTIP to MS Pool On the Ribbon SBC WebUi Interface: ✓ Settings >Transformation > New Transformation Table > New Transformation Entry	Calling Entry: Input Field Type: **Calling Address/Number** Input Field Value: depend on transformation need Output Field Type: Calling Address/Number Output Field Value: depend on transformation need Called Entry: Input Field Type: **Called Address/Number** Input Field Value: must normalize received number on Skype for Business E.164 number format Output Field Type: Called Address/Number Output Field Value: depend on transformation need
Call Routing Tables	
From MS Pool On the Ribbon SBC WebUi Interface: ✓ Settings >Call Routing Table > Create	MS Pool to BT/TIP entry: Description: **MS Pool to BT/BTIP** Route Priority: **1** Number/Name Transformation Table: MS

Menu	Value
	Pool to BT/BTIP Destination Signalling Group: (SIP) From/To BT/TIP-MS Pool Media Transcoding: Enabled (If licenced) Media List: Select the Media List created above
From BT/BTIP On the Ribbon SBC WebUi Interface: ✓ Settings >Call Routing Table > Create	BT/TIP to MS Pool entry: Description: **BT/BTIP to MS Pool** Route Priority: **1** Number/Name Transformation Table: BT/BTIP to MS Pool Destination Signalling Group: **(SIP) From/To MS Pool-BT/BTIP** Media Transcoding: Enabled (If licenced) Media List: Select the **Media List created** above
Signaling Groups	
(SIP) From/To MS Pool – BT/BTIP On the Ribbon SBC WebUi Interface: ✓ Settings >Signaling Group > SIP Signaling Group	Description: **SIP From/To MS Pool – BT/BTIP** Call Routing Table: **From MS Pool** No. of Channels: **60 (Default)** SIP Server Table: From/To MS Pool –BT/BTIP Signalling/Media Source IP :Ribbon BT/BTIP interface IP address Listen Ports:5067 /TLS TLS Profile: Select the TLS Profile created above Federated IP/FQDN: MS Pools IP/FQDN
(SIP) From/To BT/BTIP-MS Pool On the Ribbon SBC WebUi Interface: ✓ Settings >Signaling Group > SIP Signaling Group ✓ SIP > Message Manipulation > Message Rules Table	Description: **SIP From/To BT/BTIP-MS Pool** Call Routing Table: **From BT/BTIP** No. of Channels: **60 (Default)** SIP Server Table: From/To BT/BTIP –MS Pool Signalling/Media Source IP :Ribbon BT/BTIP interface IP address Listen Ports:5060 /TCP Federated IP/FQDN: ACME aSBC nominal IP address ACME aSBC backup IP address Message Manipulation: **Enabled** Outbound Message Manipulation Message Table List: User-Agent ✓ Create new SIP Message Rule Table: - Description: **User-Agent** ✓ Create new Header Rule:

Menu	Value

	- Description: **User-Agent**
	- Header Action: **Modify**
	- Header Name: **User-Agent**
	- Header Value: **Modify**
	- Add/Edit:
	    o Type of value: Token
	    o Value: user-agent
	Suffix: \ Skype for Business

4.2.3 Rerouting on the Ribbon SBC

Cause Code Reroute Tables)	1.Go to **Ribbon -> Settings -> Telephony Mapping Tables -> Cause Code Reroutes** 2. Create **New Entry ->** click **"+"** and then **"Add/Edit"** **3.** Select all **Q.850 Cause Codes** **4.** Go to **Call Routing Table** -> **SfB BT/BTIP Trunk** 5. Assign created **Couse Code Reroutes** to each **Call Route Entry**

4.2.4 Configuration Checklist for QoS in Skype for Business Clients

QoS management is done by configuring the Lync.exe at Windows level. Locally: Use policy-based Quality of Service (QoS) within Group Policy, and create a policy for Skype Audio with the following parameters By GPO: #new-NetQosPolicy -Name "S4B Audio" -AppPathNameMatchCondition "Lync.exe" -IPProtocolMatchCondition Both -IPSrcPortStartMatchCondition 50060 -IPSrcPortEndMatchCondition 50108 -DSCPAction 46 -NetworkProfile All	Policy Name: S4B Audio Application Name: Lync.exe Protocol: Both Source Port Start: 50060 Source Port End: 50108 DSCP value: 46

4.3 AudioCodes SBC configuration checklist

4.3.1 Skype for Business Configuration in case of RS-GW (Topology Builder)

On the Topology builder interface: ✓ Branch Site > SfB Server > **Mediation Pools**, right click and Edit properties	Listening ports **TLS: 5067 – 5067** **Note:** **When both VISIT and B2G offer:** Listening ports TLS must be**: 5069**
On the Topology builder interface: ✓ Branch Site > SfB Server > Shared components > PSTN gateways, right click and **New IP/PSTN Gateway** dedicated for BT/BTIP Then click Next to define **root trunk**	**FQDN** of dedicated gateway **for BT/BTIP traffic** Specify **BT trunk name** Listening port for IP/PSTN gateway**: 5067** SIP Transport protocol: **TLS** Associated Mediation Server: **Mediation Pool FQDN** Associated Mediation Server port: **5067** **Note:** **When both VISIT and B2G offer:** Listening ports TLS must be**: 5069**

4.3.2 Skype for Business Configuration in case of RS-SBA (Topology Builder)

On the Topology builder interface: ✓ Branch Site > SfB Server > **Mediation Pools**, right click and Edit properties	Listening ports **TCP: 5060 – 5060**
On the Topology builder interface: ✓ Branch Site > SfB Server > Shared components > PSTN gateways, right click and **New IP/PSTN Gateway** dedicated for BT/BTIP Then click Next to define **root trunk**	**FQDN** of dedicated gateway **for BT/BTIP traffic** Specify **BT trunk name** Listening port for IP/PSTN gateway**: 5060** SIP Transport protocol: **TCP** Associated Mediation Server: **SBA FQDN** Associated Mediation Server port: **5060**
On the Topology builder interface: ✓ Branch Site > SfB Server > Shared components > PSTN gateways, right click and **New IP/PSTN Gateway** dedicated for E1/analog **PSTN & Analog Trunk:** ✓ Branch Site > SfB Server > Shared Components > Trunks, right click and **New Trunk**	**FQDN** of dedicated gateway **for E1/Analog traffic** Specify **PSTN&Analog trunk name** Listening port for IP/PSTN gateway**: 5060** SIP Transport protocol: **TCP** Associated Mediation Server: **SBA FQDN** Associated Mediation Server port: **5060**

4.3.3 Skype for Business Configuration in case of HQ with Central SBC (Topology Builder)

On the Topology builder interface: ✓ Branch Site > SfB Server > **Mediation Pools**, right click and Edit properties	Listening ports **TCP: 5060 – 5060**
On the Topology builder interface: ✓ Branch Site > SfB Server > Shared components > PSTN gateways, right click and **New IP/PSTN Gateway** dedicated for BT/BTIP Then click Next to define **root trunk**	**FQDN** of dedicated gateway **for BT/BTIP traffic** Specify **BT trunk name** Listening port for IP/PSTN gateway**: 5060** SIP Transport protocol: **TCP** Associated Mediation Server: **MS Pool FQDN** Associated Mediation Server port: **5060**
4.3.4 AudioCodes SBC configuration	
TLS Context	
On the AudioCodes Mediant WebUi Interface: ✓ Setup > IP Network > Security > TLS Context	Links Tab TLS Context Certificate TLS Context Trusted Certificates
Media	
Voice Settings	
On the AudioCodes Mediant WebUi Interface: ✓ Setup > Signaling & Media > Media > Voice Settings	Silence Suppression: **Disable** DTMF Transport Type: **RFC 2833 Relay DTMF**
Media Security	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Media > Media Security	Media security: **Enable**
RTP / RTCP Settings	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Media > RTP / RTCP Settings	RTP Base UDP Port: **16400**
Coders and Profiles	
Coders	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Coders and Profiles > Coders	Coders Table Coder Name : **G711A-law** Packetization time : **20** Rate : **64** Payloed Type : **8** Silence Suppression : **Disabled** Coder Name : **G711U-law** Packetization time : **20** Rate : **64** Payload Type : **0** Silence Suppression : **Disabled**
Coders Group Settings	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Coders and Profiles > Coders Group Settings	Coders Group ID Coder Name : **G711A-law** Packetization time : **20** Rate : **64** Payloed Type : **8**

	Silence Suppression : **Disabled** Coder Name : **G711U-law** Packetization time : **20** Rate : **64** Payload Type : **0** Silence Suppression : **Disabled**
IP Profile Settings	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Coders and Profiles > IP Profiles	SBA or SfB IP Profile ID (GW tab) Early Media : **Enable** Hold : **Enable** (SBC Media tab) Extension Coders : **Coders Group** Allowed Audio Coders : **Coders Group** Allowed Coders Mode : **Restriction and Preference** (QoS tab) RTP IP Diffserv: 46 Signaling Diffserv: 24 BTIP IP Profile ID (GW tab) Early Media : **Enable** Hold : **Enable** (SBC Media tab) Extension Coders : **Coders Group** Allowed Audio Coders : **Coders Group** Allowed Coders Mode : **Restriction and Preference** (QoS tab) RTP IP Diffserv: 46 Signaling Diffserv: 24
VoIP Network	
Media Realm Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > Media Realms	Skype Media Realm (SBA or SfB) Name : **MRm for Skype** IPv4 Interface Name : **Mediant IPv4 Interface** Port Range Start : **16900** Number of Media Session Legs : **50** Port Range End : **Filled automatically** Default Media Realm : **Yes** BTIP Media Realm Name : **MRm for BTIP** IPv4 Interface Name : **Mediant IPv4 Interface** Port Range Start : **16400** Number of Media Session Legs : **50**

	Port Range End : **Filled automatically** Default Media Realm : **No** **This range is used to accept incoming traffic from SBC in case of BTIP incoming calls, the defined range respects the OBS infra recommandations**
SRD Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > SRDs	Name : **DefaultSRD**
SIP Interface Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > SIP Interfaces	One SIP Interface Table for RS SBA Name : **SIPInterface_BTIP&SBA** SRD : **DefaultSRD** Network Interface : **Mediant IPv4 Interface** Application Type : **SBC** TCP Port : **5060** One SIP Interface Table for HQ with Central SBC Name : **SIPInterface_BTIP&SBA** SRD : **DefaultSRD** Network Interface : **Mediant IPv4 Interface** Application Type : **SBC** TCP Port : **5060** Two SIPs Interfaces Tables for RS GW Name : **SIPInterface_SfB** SRD : **DefaultSRD** Network Interface : **Mediant IPv4 Interface** Application Type : **SBC** TLS Port : **5067** TLS Context Name : **TLS Context** Name : **SIPInterface_BTIP** SRD : **DefaultSRD** Network Interface : **Mediant IPv4 Interface** Application Type : **SBC** TCP Port : **5060**
Proxy Set Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > Proxy Sets	Proxy Set Table for Skype traffic (SBA or SfB) Name : **ProxySet for Skype Traffic** SRD : **DefaultSRD** Network Interface : **Mediant IPv4 Interface** SBC IPv4 SIP Interface : **SIP Interface for Skype Traffic** Proxy Load Balancing Method : **Round Robin** Proxy Keep-Alive Time : **60** Proxy Keep-Alive : **Using OPTIONS** (Proxy Address Table) 1 Entries : **FQDN or @IP of SBA:5060 TCP** (for SBA)

	X Entries : **FQDN or @IPs of Mediation Pool:5060 TCP** (for HQ with Central SBC) X Entries : **FQDN or @IPs of Mediation Pool:5067 TLS** (for SfB) Proxy Set Table for BTIP Traffic Name : **ProxySet for BTIP Traffic** SRD : **DefaultSRD** Network Interface : **Mediant IPv4 Interface** SBC IPv4 SIP Interface : **SIP Interface for BTIP Traffic** Proxy Keep-Alive Time : **600** Proxy Keep-Alive : **Using OPTIONS** Redundancy Mode : **Homing** Proxy Hot swap : **Enable** (Proxy Address Table) 2 Entries : **FQDN or @IP of aSBC ACME:5060 TCP**
IP Group Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > IP Groups Setup > Signaling & Media > Message Manipulation > Message Manipulations and New+	IP Group Table for Skype traffic (SBA or SfB) Name : **IPGroup for Skype Traffic** Type : **Server** Proxy Set : **Proxy Set for Skype Traffic** IP Profile : **IP Profile for Skype Traffic** Media Realm : **Media Realm for Skype traffic** IP Group Table for BTIP traffic Name : **IPGroup for BTIP Traffic** Type : **Server** Proxy Set : **Proxy Set for BTIP Traffic** IP Profile : **IP Profile for BTIP Traffic** Media Realm : **Media Realm for BTIP traffic** Outbound Message Manipulation : **Manipulation Set ID** associated to User-Agent Message Manipulation User-Agent Message Manipulation Name: **User-Agent** Manipulation Set ID: **@ID** Message Type: **Any** Action subject: **Header.User-Agent** Action Type: **Modify** Action Value : **Header.User-Agent.Content + ' \ Skype for Business'**
SIP Definitions	
General Parameters	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > SIP Definitions > SIP Definitions General Settings	PRACK Mode : **Supported** Channel Select Mode : **Cyclic Ascending** Enable Early Media : **Enable**
SBC	
Allowed Audio Coders Group	

On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Coders and Profiles > Allowed Audio Coders Groups	Allowed Audio Coders Group ID Coder Name 1 : **G711A-Law** Coder Name 2 : **G711U-Law**
IP-to-IP Routing Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > SBC > IP-to-IP Routing	SIP Options rule Name : **SIP Options** Alternative Route Options: **Route Row** Source IP Group : **Any** Request Type : **OPTIONS** Destination Type : **Dest Address** Destination IP Group : **None** Destination SIP Interface : **None** Destination Address : **internal** Skype to BTIP rule Name : **Skype to BTIP** Alternative Route Options: **Route Row** Source IP Group : **Skype IP Group** Request Type : **All** Destination Type : **IP Group** Destination IP Group : **BTIP IP Group** Destination SIP Interface : **BTIP SIP Interface** BTIP to Skype rule Name : **BTIP to Skype** Alternative Route Options: **Route Row** Source IP Group : **BTIP IP Group** Request Type : **All** Destination Type : **IP Group** Destination IP Group : **BTIP IP Group** Destination SIP Interface : **Skype SIP Interface**
4.3.5 Rerouting with AudioCodes SBC	
Alternative Routing with AudioCodes SBC	1.Open the Alternative Routing Reasons page Setup > Signaling & Media > SBC > Routing > Alternative Routing Reasons 2. Select the **IP-to-IP Routing** **3.Alternative route** must be directly under first route 4.Edit **Alternative Route** > set up **Alternative Route Options** on **Alternative Route Consider Inputs** **5.Apply** changes 6.Click **SAVE** to save changes to the flash memory

4.3.6 Gateway for PSTN calls (Annex 1) Only for RS SBA and RS GW	
Trunk Group	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Gateway > Trunks & Groups > Trunk Groups	Configure Group Index Module : **PRI** From/To Trunk : **1** Channels : **1-31** Phone Number : **Phone number used for the Trunk** Trunk Group ID : **Trunk Group ID associated**
Trunk Group Settings	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Gateway > Trunks & Groups > Trunk Group Settings	Add Trunk Group Settings Name : **E1 PSTN** Trunk Group ID : **Trunk Group ID associated** Channel Selected Mode : **Cyclic Descending** Registration Mode : **Don't Register**
Trunk Settings	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Gateway > Trunks & Groups > Trunks	Protocol Type : **E1 EURO ISDN** Line Code : **HDB3** Framing Method : **Extend super Frame**
VoIP Network Configuration	
Media Realm Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > Media Realms	Can be the same as Skype Media Realm Name : **MRm for Skype** IPv4 Interface Name : **Mediant IPv4 Interface** Port Range Start : **16900** Number of Media Session Legs : **50** Port Range End : **Filled automatically** Default Media Realm : **Yes**
SRD Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > SRDs	Same as Skype SRD Table Name : **DefaultSRD**
SIP Interface Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > SIP Interfaces	SIP Interface Table Name : **SIPInterface_PSTN** SRD : **DefaultSRD** Network Interface : **Mediant IPv4 Interface for E1/Analog** Application Type : **GW** TCP Port : **5060**

Proxy Set Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > Proxy Sets	Proxy Set Table for PSTN traffic Name : **ProxySet for PSTN Traffic** SRD : **DefaultSRD** Network Interface : **Mediant IPv4 Interface for E1/Analog** SBC IPv4 SIP Interface : **SIP Interface for PSTN Traffic** Proxy Load Balancing Method : **Round Robin** Proxy Keep-Alive Time : **60** Proxy Keep-Alive : **Using OPTIONS** (Proxy Address Table) 1 Entry : **FQDN or @IP of SBA:5060 TCP**
IP Group Table	
On the AudioCodes Mediant WebUi Interface: (Advanced mode) Configuration > VoIP > VoIP Network > IP Group Table	IP Group Table for Skype traffic Name : **IP Profile for PSTN Traffic** Type : **Server** Proxy Set : **Proxy Set for PSTN Traffic** IP Profile : **IP Profile for Skype Traffic** Media Realm : **Media Realm for Skype Traffic**
Routing	
General Parameters	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Gateway > Routing > Routing Settings	Enable Alt Routing Tel to IP : **Enable**
IP To Trunk Group Routing	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Gateway > Routing > IP To Tel	Skype To PSTN rule Name : **Skype To PSTN** Source IP Group : **Skype IP Group** Source SIP Interface : **PSTN SIP Interface** Trunk Group ID : **PSTN Trunk Group ID** Destination Type : **Trunk Group**
TEL To IP	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Gateway > Routing > TEL To IP	PSTN To Skype rule Name : **PSTN To Skype** Source Trunk Group ID : **PSTN Trunk Group ID** Destination IP Group : **Skype IP Group** SIP Interface : **PSTN SIP Interface** IP Profile : **Skype IP Profile**
4.3.7 Gateway for Analog calls (Annex 2)	
Trunk Group	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Gateway > Trunk Group	Configure Group Index Module : **FXS** Channels : **1** Phone Number : **Analog number in e164 format** Trunk Group ID : **Trunk Group ID for Analog**
Trunk Group Settings	
On the AudioCodes Mediant WebUi Interface:	Add Trunk Group Settings

Setup > Signaling & Media > Gateway > Trunk Group Settings	Name : **Analog** Trunk Group ID : **Trunk Group ID for Analog** Channel Selected Mode : **By Dest Phone Number** Registration Mode : **Don't Register**
Analog Settings	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Gateway > Analog Gateway > Analog Settings	Analog Metering Type : **12 Khz Sinusoidal bursts** FXS Coefficient Type : **Europe**
VoIP Network Configuration	
Media Realm Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > Media Realms	Can be the same as Skype Media Realm Name : **MRm for Skype** IPv4 Interface Name : **Mediant IPv4 Interface** Port Range Start : **16900** Number of Media Session Legs : **50** Port Range End : **Filled automatically** Default Media Realm : **Yes**
SRD Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > SRDs	Same as Skype SRD Table Name : **DefaultSRD**
SIP Interface Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > SIP Interfaces	SIP Interface Table Name : **SIPInterface_Analog** SRD : **DefaultSRD** Network Interface : **Mediant IPv4 Interface for E1/Analog** Application Type : **GW** TCP Port : **5060**
Proxy Set Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > Proxy Sets	Proxy Set Table for Analog traffic Name : **ProxySet for Analog Traffic** SRD : **DefaultSRD** Network Interface : **Mediant IPv4 Interface for E1/Analog** SBC IPv4 SIP Interface : **SIP Interface for Analog Traffic** Proxy Load Balancing Method : **Round Robin** Proxy Keep-Alive Time : **60** Proxy Keep-Alive : **Using OPTIONS** (Proxy Address Table) 1 Entries : **FQDN or @IP of SBA:5060 TCP**
IP Group Table	
On the AudioCodes Mediant WebUi Interface: Setup > Signaling & Media > Core Entities > IP Groups	IP Group Table for Skype traffic Name : **IP Profile for Analog Traffic** Type : **Server** Proxy Set : **Proxy Set for Analog Traffic** IP Profile : **IP Profile for Skype Traffic** Media Realm : **Media Realm for Skype Traffic**

Manipulations	
IP To Trunk Group Routing	
On the AudioCodes Mediant WebUi Interface: (Advanced mode) Setup > Signaling & Media > Gateway > Manipulations > IP To Trunk Group Routing	Skype To Analog manipulation rule Name : **Skype To Analog** Source IP Group : **Skype IP Group** Destination Prefix : **Analog phone number**
TEL To IP	
On the AudioCodes Mediant WebUi Interface: (Advanced mode) Setup > Signaling & Media > Gateway > Manipulations > TEL To IP	Analog To Any manipulation rule Name : **Analog To Any** Source Trunk Group ID : **Analog Trunk Group ID** Destination IP Group : **Any** Prefix to Add : **+**
Routing	
IP To Trunk Group Routing	
On the AudioCodes Mediant WebUi Interface: (Advanced mode) Setup > Signaling & Media > Gateway > Routing > IP To Trunk Group Routing	Skype To Analog routing rule Name : **Skype To Analog** Source IP Group : **Skype IP Group** Source SIP Interface : **Analog SIP Interface** Destination Phone Prefix : **Analog number in e164** Destination Trunk Group : **Trunk Group** Trunk Group ID : **2**
TEL To IP	
On the AudioCodes Mediant WebUi Interface: (Advanced mode) Setup > Signaling & Media > Gateway > Routing > TEL To IP	Analog To Skype routing rule Name : **Analog To Skype** Source Trunk Group ID : **Analog Trunk Group ID** Destination IP Group : **Skype IP Group** SIP Interface : **Analog SIP Interface** IP Profile : **Skype IP Profile**

4.3.8 Configuration Checklist for QoS in Skype for Business Clients

QoS management is done by configuring the Lync.exe at Windows level. Locally: Use policy-based Quality of Service (QoS) within Group Policy, and create a policy for Skype Audio with the following parameters By GPO: #new-NetQosPolicy -Name "S4B Audio" -AppPathNameMatchCondition "Lync.exe" -IPProtocolMatchCondition Both -IPSrcPortStartMatchCondition 50060 -IPSrcPortEndMatchCondition 50108 -DSCPAction 46 -NetworkProfile All	Policy Name: S4B Audio Application Name: Lync.exe Protocol: Both Source Port Start: 50060 Source Port End: 50108 DSCP value: 46

4.4 CAC Configuration

Enable CAC	
SFB PowerShell On the Skype for Business PowerShell Interface: ✓ ***Set-CsNetworkConfiguration -EnableBandwidthPolicyCheck*** **SFB Control Panel** On the Skype for Business control panel interface: ✓ Network Configuration >Global	SFB PowerShell **EnableBandwidthPolicyCheck** parameter has to be set to **1** SFB Control Panel **Enable call admission control** parameter has to be **checked**
Media bypass configuration (In case of RS SBA and/or RS Default)	
SFB PowerShell On the Skype for Business PowerShell Interface: ✓ ***$a= New-CsNetworkMediaBypassConfiguration -alwaysByPass $false -Enabled $false*** ✓ ***Set-CsNetworkConfiguration –MediaBypassSettings $a*** **SFB Control Panel** On the Skype for Business control panel interface: Network Configuration >Global	SFB PowerShell ✓ ***AlwaysByPass*** parameter has to be set to **false** ✓ ***Enable*** parameter has to be set to **false** SFB Control Panel ✓ **Enable media bypass** parameter must not be **checked**
Media bypass configuration (In case of RS GW or a mix of RS GW, RS SBA and RS Default)	
SFB PowerShell On the Skype for Business PowerShell Interface: ✓ ***$a= New-CsNetworkMediaBypassConfiguration -alwaysByPass $ false -Enabled $true*** ✓ ***Set-CsNetworkConfiguration –MediaBypassSettings $a*** **SFB Control Panel** On the Skype for Business control panel interface: ✓ Network Configuration >Global	SFB PowerShell ✓ ***AlwaysByPass*** parameter has to be set to **false** ✓ ***Enable*** parameter has to be set to **true** SFB Control Panel ✓ **Enable media bypass** parameter has to be **checked** ✓ **Choose "**Use sites and region configuration**"**
Media bypass Trunk Configuration (Only in case of RS-GW)	
SFB Control Panel On the Skype for Business Control panel interface ✓ Voice Routing > Trunk Configuration And then select the RS-GW Trunk to edit Trunk configuration	SFB Control Panel ✓ **Enable media bypass** parameter has to be **checked**
Trunk configuration (SFB PowerShell) On the Skype for Business PowerShell Interface: ✓ ***Set-CsTrunkConfiguration –Identity <Site> –RTCPActiveCalls***	**-Site:** The name of the site

$False ✓ ***Set-CsTrunkConfiguration –Identity <Site> –RTCPCallsOnHold $False***	
Network Region	
SFB PowerShell On the Skype for Business PowerShell Interface: ✓ ***New-CsNetworkRegion –Identity <XdsIdentity> -CentralSite <Central_Site> –AudioAlternatePath $False -Description "All Locations"*** **SFB Control Panel** On the Skype for Business control panel interface: ✓ Network Configuration >Global	SFB PowerShell **-Identity:** The name of the network region **-Central site:** The name of the central site as defined on SFB topology builder SFB Control Panel **Identity:** The name of the network region **Central site:** The name of the central site as defined on SFB topology builder **Audio alternate path**: Recommended to disable
Bandwidth Policy profiles	
CAC Onnet – Network sites and Network Region CAC	
SFB PowerShell On the Skype for Business PowerShell Interface: ✓ ***New-CsNetworkBandwidthPolicyProfile -Identity <BWname> –Description "Descr Name" -AudioBWLimit <AudiototalBW> -AudioBWSessionLimit <AudiosessionBW> -VideoBWLimit <VideototalBW> -VideoBWSessionLimit <VideoSessionBW>*** **SFB Control Panel** On the Skype for Business control panel interface: ✓ Network Configuration >Bandwidth Policy	SFB PowerShell **-Identity:** The name of the bandwidth region (eg: **CAC_basse**) **-AudioBWLimit:** The total bandwidth allowed for calls on network sites associated to this BW profile policy **-AudioBWSession Limit:** The session bandwidth allowed for one call on network site associated to this BW profile policy → has to be set to **100** **-VideoBWLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) **-VideoBWSessionLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) SFB Control Panel **Identity:** The name of the bandwidth region (eg: **CAC_basse**) **AudioBWLimit:** The total bandwidth allowed for calls on network sites associated to this BW profile policy **AudioBWSession Limit:** The session bandwidth allowed for one call on network site associated to this BW profile policy → has to be set to 100 **VideoBWLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) **VideoBWSessionLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) on SFB topology builder
CAC SIP Trunk – Inter site CAC	
SFB PowerShell	SFB PowerShell **-Identity:** The name of the bandwidth region

On the Skype for Business PowerShell Interface: ✓ ***New-CsNetworkBandwidthPolicyProfile* -Identity *<BWname>* – Description “*Descr Name*” -AudioBWLimit *<AudiototalBW>* -AudioBWSessionLimit *<AudiosessionBW>* -VideoBWLimit *<VideototalBW>* -VideoBWSessionLimit *<VideoSessionBW>*** **SFB Control Panel** On the Skype for Business control panel interface: ✓ Network Configuration >Bandwidth Policy	(eg: **CAC_SIPTrunk**) **-AudioBWLimit:** The total bandwidth allowed for calls on network sites associated to this BW profile policy **-AudioBWSession Limit:** The session bandwidth allowed for one call on network site associated to this BW profile policy → has to be set to **97** **-VideoBWLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) **-VideoBWSessionLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) SFB Control Panel **Identity:** The name of the bandwidth region (eg: CAC_SIPTrunk) **AudioBWLimit:** The total bandwidth allowed for BT/BTIP calls on network sites associated to this BW profile policy **AudioBWSession Limit:** The session bandwidth allowed for one BT/BTIP call on network site associated to this BW profile policy → has to be set to **97** **VideoBWLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) **VideoBWSessionLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) on SFB topology builder
CAC Zero – BT/BTIP network site to Network region CAC	
SFB PowerShell On the Skype for Business PowerShell Interface: ✓ ***New-CsNetworkBandwidthPolicyProfile* -Identity *<BWname>* – Description “*Descr Name*” -AudioBWLimit *<AudiototalBW>* -AudioBWSessionLimit *<AudiosessionBW>* -VideoBWLimit *<VideototalBW>* -VideoBWSessionLimit *<VideoSessionBW>*** **SFB Control Panel** On the Skype for Business control panel interface: ✓ Network Configuration >Bandwidth Policy	SFB PowerShell **-Identity:** The name of the bandwidth region (eg: **CAC_Zero**) **-AudioBWLimit:** The total bandwidth allowed for calls on network sites associated to this BW profile policy → parameter has to be set to **0** **-AudioBWSession Limit:** The session bandwidth allowed for one call on network site associated to this BW profile policy → has to be set to **40** **-VideoBWLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) **-VideoBWSessionLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) SFB Control Panel **Identity:** The name of the bandwidth region (eg: **CAC_Zero**) **AudioBWLimit:** The total bandwidth allowed for BT/BTIP calls on network sites associated to this BW profile policy →

	parameter has to be set to **0** **AudioBWSession Limit:** The session bandwidth allowed for one BT/BTIP call on network site associated to this BW profile policy → has to be set to **40** **VideoBWLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) **VideoBWSessionLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) on SFB topology builder
CAC Edge – Edge network site to Network region CAC	
SFB PowerShell On the Skype for Business PowerShell Interface: ✓ ***New-CsNetworkBandwidthPolicyProfile* -Identity *<BWname>* –Description “*Descr Name*” -AudioBWLimit *<AudiototalBW>* -AudioBWSessionLimit *<AudiosessionBW>* -VideoBWLimit *<VideototalBW>* -VideoBWSessionLimit *<VideoSessionBW>*** **SFB Control Panel** On the Skype for Business control panel interface: ✓ Network Configuration >Bandwidth Policy	SFB PowerShell **-Identity:** The name of the bandwidth region (eg: **CAC_Edge**) **-AudioBWLimit:** The total bandwidth allowed for calls on network sites associated to this BW profile policy → parameter has to be set to **9999999999** **-AudioBWSession Limit:** The session bandwidth allowed for one call on network site associated to this BW profile policy → has to be set to **100** **-VideoBWLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) **-VideoBWSessionLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) SFB Control Panel **Identity:** The name of the bandwidth region (eg: **CAC_Edge**) **AudioBWLimit:** The total bandwidth allowed for BT/BTIP calls on network sites associated to this BW profile policy → parameter has to be set to **999999999** **AudioBWSession Limit:** The session bandwidth allowed for one BT/BTIP call on network site associated to this BW profile policy → has to be set to **100** **VideoBWLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) **VideoBWSessionLimit:** Not applied with BT/BTIP (used for onnet calls refer to B2G documentation) on SFB topology builder
Network Sites	
SFB PowerShell On the Skype for Business PowerShell Interface: ✓ ***New-CsNetworkSite*-NetworkSIteID *<NSname>* –Description “*Descr Name*” -NetworkRegionID *<NRname>* -**	SFB PowerShell **-NetworkSiteID:** The name of the network site **-Description:** Optional **-NetworkRegionID:** Select the network region to associate to created network site

BWPolicyProfileID *<BWPname>* **SFB Control Panel** On the Skype for Business control panel interface: ✓ Network Configuration > Site	**-BWPolicyProfileID:** Select the bandwidth profile policy to associate to created network site SFB Control Panel **-NetworkSiteID:** The name of the network site **-Description:** Optional **-NetworkRegionID:** Select the network region to associate to created network site **-BWPolicyProfileID:** Select the bandwidth profile policy to associate to created network site
Inter Site Policy	
SFB PowerShell On the Skype for Business PowerShell Interface: ✓ *New-CsNetworkInterSitePolicy–Identity* *<NetworkInterSitename>-BWPolicyProfileID* *<SIPTRUNK_BWPname>* *-NetworkSiteID1* *<NS1name>-NetworkSiteID2* *<BTIP_NS_name>*	SFB PowerShell **-Identity:** The name of the network inter site policy **-BWPolicyProfileID:** Select the bandwidth profile policy to associate to created network inter site policy **-NetworkSiteID1:** parameter has to correspond to the network site 1 (SFB component) to associate to BTIP using inter site policy **-NetworkSiteID2:** parameter has to correspond to the BT/BTIP network site name **WARNING:** NO Inter site for Remote site Gateway
Subnets	
SFB PowerShell On the Skype for Business PowerShell Interface: ✓ *New-CsNetworkSubnet-SubnetID* *<firstsubnetIPaddress>-MaskBits* *<maskwo/>* *-NetworkSiteID* *<associated NS_name>* **SFB Control Panel** On the Skype for Business control panel interface: Network Configuration > Subnet	SFB PowerShell **-SubnetID:** The first IP address of the corresponding subnet **-MaskBits:** The subnet mask to associate to subnet to create without / (eg:**32**) **-NetworkSiteID:** Select the network site name from the drop down list to associate to this subnet (eg: **BTIP**) SFB Control Panel **-SubnetID:** The first IP address of the corresponding subnet **-MaskBits:** The subnet mask to associate to subnet to create without / (eg:**32**) **-NetworkSiteID:** Select the network site name from the drop down list to associate to this subnet (eg: **BTIP**)

4.5 Configuration requirements (warnings)

Configuring Clients ports range for LPE and SoftPhone	
SFB PowerShell On the Skype for Business PowerShell Interface ***Set-CsConferencingConfiguration* –ClientMediaPortRangeEnabled *$true* –ClientAudioPort *50060* –ClientAudioPortRange *48***	SFB PowerShell -**ClientMediaPortRangeEnable :** must be enabled in order to use the specific range -**ClientAudioPort :** corresponds to the first port used for audio -**ClientAudioPortRange :** corresponds to the audio range
Configuring Clients ports range for VVX	
✓ Using VVX Web UI : - Navigate through the VVX Web Interface: http:<VVX_IP_Address> - Go to Settings tab > Network menu > RTP - Configure the Port Range Start to: 50060	VVX WebUI
✓ Using VVX configuration file (.cfg) - Configure the following line in the VVX configuration file : tcpIpApp.port.rtp.mediaPortRangeStart="50060" - Import the new configuration file to the VVX using the WebUI or through the IIS server	VVX WebUI or IIS Server
Others Devices	
✓ Check that the audio range port respect the OBS recommendations The default audio range is: 50060-50107.	

5 AudioCodes FAX configuration checklist

5.1 FXS fax on Mediant configuration

5.1.1 Telephony profile

The FXS ports with fax devices connected requires dedicated configuration for fax. To create TelProfile go to **SETUP** > **SIGNALING & MEDIA** > **CODERS & PROFILES** > **Tel Profiles.**

Create new profile by pressing + New and set:

Parameter	Value	Description
Name	**TelProfile_FXSFAX**	Profile name
Fax Signaling Method	***T.38 Relay***	Select T.38 protocol for fax transmission

5.1.2 FXS port configuration update

Go to **SETUP** > **SIGNALING & MEDIA** > **GATEWAY** > **Trunks & Groups** > **Trunk Groups**

Update TEL PROFILE NAME on chosen trunk group to **TelProfile_FXSFAX**

5.1.3 Update IP Profile

Note
Please note that there are differences for BT and BTIP configuration for this point.

5.1.3.1 Configuration for BT architecture

Go to **SETUP** > **SIGNALING & MEDIA** > **CODERS & PROFILES** > **IP Profiles.**

Select profile defined for Business Talk IP Group and update parameters:

Parameter	Value	Description
MEDIA SECURITY		
SBC Media Security Mode	**RTP**	Disable secured RTP to avoid TLS in SDP
Gateway Media Security Mode	**Disable**	Disable secured RTP to avoid TLS in SDP
SBC FAX		
Remote Renegotiate on fax detection	**No**	Describes if the **remote rene**gotiate on fax detection
GATEWAY FAX AND MODEM		
Fax Signaling Method	**T.38 Relay**	Use T38 for fax transmission

5.1.3.2 Configuration for BTIP architecture

Go to **SETUP** > **SIGNALING & MEDIA** > **CODERS & PROFILES** > **IP Profiles.**

Select profile defined for Business Talk IP Group and update parameters:

Parameter	Value	Description
MEDIA SECURITY		
SBC Media Security Mode	**RTP**	Disable secured RTP to avoid TLS in SDP
Gateway Media Security Mode	**Disable**	Disable secured RTP to avoid TLS in SDP
GATEWAY FAX AND MODEM		
Fax Signaling Method	**T.38 Relay**	Use T38 for fax transmission

5.1.4 General fax parameters

Note
Please note that there are differences for BT and BTIP configuration for this point.

5.1.4.1 Configuration for BT architecture

Go to **SETUP** > **SIGNALING & MEDIA** > **MEDIA** > **Fax/Modem/CID Settings** and update:

Parameter	Value	Description
Fax Transport Mode	**T.38 Relay**	Use T38 for fax transmission
CNG Detector Mode	**Event only**	Determines the fax CNG tone detector mode.
Fax Relay Redundancy Depth	**1**	Set pages transmission redundancy
Fax Relay Enhanced Redundancy Depth	**4**	Set fax negotiation redundancy
Fax/Modem Bypass Coder Type	**8**	Sets the **Fax/Modem** bypass coder

Go to **SETUP** > **SIGNALING & MEDIA** > **MEDIA** > **RTP/RTCP Settings** and update:

Parameter	Value	Description
Modem Bypass Payload Type	**8**	**Modem Bypass** (VBD) Payload type.

The next, EnableFaxModemInbandNetworkDetection parameter can be set only using CLI/configuration file and is not visible in web application. To set this parameter go to dedicated configuration page: https://<MediantIP>/AdminPage (**note: subpage address is case sensitive**).

Go to "ini Parameters" subsite using left sided menu.

Parameter name: **EnableFaxModemInbandNetworkDetection**
Enter value: **1**

Click "Apply New Value".

If parameter is set correctly you should see output:

```
Parameter Name: ENABLEFAXMODEMINBANDNETWORKDETECTION
Parameter New Value: 1
Parameter Description: Enables or disables inband network detection related
to fax/modem.
```

5.1.4.2 Configuration for BTIP architecture

Go to **SETUP** > **SIGNALING & MEDIA** > **MEDIA** > **Fax/Modem/CID Settings** and update:

Parameter	Value	Description
Fax Transport Mode	T.38 Relay	Use T38 for fax transmission
Fax Relay Redundancy Depth	1	Set pages transmission redundancy
Fax Relay Enhanced Redundancy Depth	4	Set fax negotiation redundancy

5.1.5 Routing

The routing of fax calls must be reconfigured to bypass Mediation Server. Go to **SETUP** > **SIGNALING & MEDIA** > **GATEWAY** > **Routing** > **Tel->IP Routing.** Select line assigned to chosen FXS or create new one:

Parameter	Value	Description
Source Trunk Group IP	*<trunkID>*	Trunk ID for selected FXS port
Destination IP Group	*<BT IP Group>*	IP Group for Business Talk aSBC
SIP Interface	*<SIP Interface>*	SIP Interface for Business Talk aSBC access

Go to **SETUP** > **SIGNALING & MEDIA** > **GATEWAY** > **Routing** > **IP->Tel Routing.** Create new entry:

Parameter	Value	Description
Source SIP Interface	*<SIP Interface>*	SIP Interface for Business Talk aSBC access
Destination Phone Pattern	*<FAX DID>*	Set FAX DID accessed by BT
Destination Type	Trunk Group	
Trunk Group ID	*<Trunk Group IP>*	Trunk ID for selected FXS port
Source IP Group	*<BT IP Group>*	IP Group for Business Talk aSBC

Go to **SETUP** > **SIGNALING & MEDIA** > **SBC** > **Routing** > **IP-to-IP Routing.** Create new entry:

Parameter	Value	Description
Source IP Group	*<BT IP Group>*	IP Group for Business Talk aSBC
Destination Username Pattern	*<FAX DID>*	Set FAX DID accessed by BT
Destination Type	Gateway	

When created please move new entry before default Business Talk route.

5.1.6 V34-fax-transport-type

The next, V34FaxTransportType parameter can be set only using CLI/configuration file and is not visible in web application. To set this parameter go to dedicated configuration page: https://<MediantIP>/AdminPage (**note: subpage address is case sensitive**).

Go to “ini Parameters” subsite using left sided menu.

Parameter name: **V34FAXTRANSPORTTYPE**
Enter value: **1**

Click “Apply New Value”.

If parameter is set correctly you should see output:

```
Parameter Name: V34FAXTRANSPORTTYPE
Parameter New Value: 1
Parameter Description:Determines the V.34 fax transport method.
```

5.1.7 Analog device on Skype

There is no need to define analog device on Skype since signalization goes directly between Mediant and Business Talk.

5.2 FXS fax on MediaPack cascaded behind Mediant

The fax integration on MediaPack with Business Talk through Mediant is based on assumption that fax calls are not sent to Mediation Server. In such scenario Mediant gateway only mediates in communication.

5.2.1 MediaPack configuration

The MediaPack gateway must be first integrated directly with Mediant. The MediaPack endpoints are registered to Mediant using SIP REGISTER

5.2.1.1 Telephony Profile

The telephony profile assigned to FXS port must be updated to enable T.38 protocol. Go to **VoIP -> Coders and Profiles -> Tel Profile Settings.** Select appropriate profile (or create new one) and update **Fax Signaling Method** to **T.38 Relay:**

Note: Assigned Tel Profile can be checked under **VoIP -> GW and IP to IP -> Hunt Group ->**

Endpoint Phone Number

5.2.1.2 Configure fax transmission parameters

Go to **VoIP -> Media -> Fax/Modem/CID Settings** and set following parameters:

Parameter	Value	Description
Fax Transport Mode	T.38 Relay	Enable T.38
V.34 Modem Transport Type	Disable	Disable V.34 signals (block SG3 fax)
Fax Relay Redundancy Depth	1	Redundancy of transmitting pages
Fax Relay Enhanced Redundancy Depth	4	Redundancy of fax signalization

5.2.2 Mediant configuration

Configuration starts from integration with MediaPack.

5.2.2.1 IP to IP Routing

Click **New** to create routing for outgoing fax calls from MediaPack to BT/BTIP

Parameter	Value	Description
General > Name	MediaPack_AD_to_BT	
Match > Source IP Group	IPG_MediaPack_AD	
Match > Request Type	All	
Action > Destination Type	IP Group	
Action > Destination IP Group	*<BT IP Group>*	IP Group for Business Talk aSBC
Action > Destination SIP Interface	*<SIP Interface>*	SIP Interface for Business Talk aSBC access

Click **New** to create routing for incoming fax calls from BT/BTIP to MediaPack

Parameter	Value	Description
General > Name	BT_to_MediaPack_AD	
Match > Source IP Group	*<BT IP Group>*	
Match > Request Type	All	
Match > Destination Username	*<Fax phone number>*	
Action > Destination Type	All Users	

Note: place these rules before default entry forwarding calls to Skype

Also, calls must be routed directly:

- From IP Group defined for calls from MediaPack towards Business Talk
- From IP Group defined for calls from Business Talk towards “All Users” destination (if MediaPack is configured to register FXSW ports on Mediant)

6 Ribbon FAX configuration checklist

6.1 FXS fax with Ribbon configuration

The following guide describes steps which should be followed to enable the use of analogue fax devices on Ribbon Gateway. It is assumed that initial configuration of the Ribbon gateway is already done.

6.2 Media Profile

It is necessary to enable T.38 support by setting T.38 Fax as a codec in Media Profile tab. In order to do that go to SETTINGS > MEDIA > MEDIA PROFILE

Create a new profile by pressing Create Media Profile and then Fax Codec Profile

Parameter	Value	Description
Description	T38 Profile	Profile name
Codec	*T.38 Fax*	Select T.38 protocol for fax transmission
Signalling Packet Redundancy	4	Signalization redundancy
Payload Packet Redundancy	1	Page transmission redundancy
Fallback to Passthrough	Disabled	FAX transmission cannot fallback to G711 passthrough. BT does not support G711 passthrough mode
Super G3 to G3 Fallback	Enabled	Force SG3 Fax calls switch to G3 mode. Speed is reduced to 14400bps. ECM is not disabled administratively.

6.3 Fax Media List

Go to SETTINGS > MEDIA > MEDIA LIST and press + to add a new Media List.

Parameter	Value	Description
Description	FAX Media List	Media List name
Media Profiles List	Default G711A T.38 Profile	Add here the voice codec (here: G.711A) and the fax media codec (here: T.38 Profile)
Digit (DTMF) Relay Type	RFC 2833	Specifies how DTMF digits are passed through data network.
Modem Passthrough	Disabled	Specifies whether modem passthrough is enabled when using the G.711 codec.
Fax Passthrough	Disabled	Specifies whether fax passthrough is enabled when using the G.711 codec.
CNG Tone Detection	Disabled	Specifies whether the SONUS-SBC system will detect Fax tones produced by the origination side fax machine.

6.4 FXS port configuration

To configure an FXS port go to SETTINGS > NODE INTERFACES and select the port to which a Fax machine will be connected.

Parameter	Value	Description
Analog Line Profile	<Country>	A country dependent parameter

6.5 CAS Signalling Profile

CAS Signalling Profiles control various aspects of loop start, DTMF, tone detection and other features associated with the variants of CAS calls. In order to create a CAS Signaling Profile go to SETTINGS > CAS > CAS SIGNALING PROFILES
Create a new profile by selecting Create CAS Profile and then FXS Profile.

Parameter	Value	Description
Description	<Profile Name>	CAS Signalling Profile name
Loop Start Type	Basic	Specifies the Loop Start method

6.6 Transformation Table

FXS FAX Towards BT
Outgoing FXS Fax makes use of the same Transformation Table as standard outgoing BT calls

BT Towards FXS FAX
Create a new Transformation Table for faxes incoming from BT. Go to SETTINGS > CALL ROUTING > TRANSFORMATION then press + and fill the description field to name the table. Select the newly created table and press + to add a new entry.

Parameter	Value	Description
Match Type	Mandatory / Optional	This option states whether the number matching should be mandatory or optional
Input Field - Value	<\FXS Fax number>	Number matching rule. The backslash is used to treat plus "+" as character and not regex special symbol.
Output Field - Value	< FXS Fax number>	Set the same number in transformation output.

6.7 CAS Signalling Group

New CAS signalling group for fax devices must be created on Ribbon gateway. Calls from CAS dedicated for faxes will be routed differently so existing CAS for analogue phones cannot be used.

Parameter	Value	Description

Description	<CAS Signaling Group Name>	CAS Signalling Group Name
Channel Hunting	Own Number	Parameter must be set to Own Number to send incoming calls to a proper fax machine
Call Routing Table	<Call Routing Table Towards BT>	Select existing Call Routing Table Towards BT
CAS Signaling Profile	<CAS Signaling Profile>	Select existing CAS Signalling Profile

In Assigned Channels table create a new entry with dedicated phone number for each fax port.

6.8 Call Routing Table

FXS FAX Towards BT
Outgoing FXS Fax makes use of the same Call Routing Table as standard outgoing BT calls

BT Towards FXS FAX
Go to SETTINGS > CALL ROUTING > CALL ROUTING TABLE and select a proper call routing table for outgoing calls towards BT. Afterwards press + to add an entry to the table.

Parameter	Value	Description
Number/Name Transformation Table	<Transformation Table BT Towards FXS fax>	Select proper Transformation Table for incoming FXS fax
Destination Signaling Groups	<CAS Signaling Group>	Select existing CAS FXS Signalling Group
Media Mode	DSP	Enable Ribbon DSP resources for FAX transcoding purpose
Media List	FAX Media List	Select media list containing T.38 codec.

6.9 Update Codecs

Please make sure that FAX Media List is configured on the following:

- Call Routing Table entry from CAS (FXS FAX) to BT
- Call Routing Table entry from BT to CAS (FXS FAX)
- Business Talk SIP Signaling Group(s)

6.10 Analog device on Skype

There is no need to define analog device on Skype since signalization goes directly between Ribbon Gateway and Business Talk.

7 Skype for Business Online – AudioCodes Cloud Connector Edition configuration checklist

7.1 Generic configuration

Menu	Value
TCP Mediation Server	
The TCP Mediation Server must be 5068: On the PowerShell interface execute the following command: **Set-CSMediationServer** -Identity *<MediationServer:MS-FQDN>* -SipClientTcpPort *<5068>*	Identity: must match corresponding **mediation server FQDN** SipClientTcpPort: must be set to **5068**
PSTN Gateway	
During Cloud Connector Edition Trunk must be created for SBC	SIP Transport protocol: **TCP** Mediation Server port: **5068**
O365 Cloud Connector Edition	
Register Check Open an online session on the PowerShell, then execute: Get-CsTenantFederationConfiguration	SharedSipAddressSpace: must be set to **$true**
Open an online session on the PowerShell, then execute: Get-CsTenantHybridConfiguration	UseOnPremiseDialPlan: must be set to **$false**
CCE admin account association Open an online session on the PowerShell, then execute: Set-CsHybridMediationServer -Id *<UserName>* -FQDN *<MSFQDN>* -AccessProxyExternalFqdn *<EdgeExternationFQDN>*	ID: must be filled with **CCE admin account SIP address** FQDN: must be filled with the associated **Mediation Server FQDN** AccessProxyExternalFqdn: must be filled with the **Edge Server External access FQDN**
User Management	
User creation in O365 Active Directory Connect to O365 tenant and create a new user.	DNS: must be the **customer DNS** 'Not the xxx.onmicrosoft.com default domain' User country: must be filled 'important for dial plan usage' Assign appropriate License**:** Plan E3 with CloudPBX add-on option Or Plan E5 'CloudPBX included by default'
Policies assignment and phone number attribution to User Open an online session on the PowerShell, then execute: Set-CsUser -Identity *<UserName>* -EnterpriseVoiceEnabled *$true* -HostedVoiceMail *$true* -OnPremLineURI *<tel:+PhoneNumber>*	Identity: **User name** EnterpriseVoiceEnabled: **$true** HostedVoiceMail: **$true** OnPremLineUri: **tel:+E164 format number**
User Association to appropriate Cloud Connector Edition Open an online session on the PowerShell, then execute: Set-CsUserPstnSettings -Id *<UserName>* -HybridPSTNSite *<PSTNSiteName>*	Id: **User name** HybridPSTNSite: **appropriate CCE where the user will be associated**

7.2 Standalone specific configuration

Menu	Value
Cloud Connector Edition Wizard (version 2.1.0.22)	
CCE General Information (step) During wizard installation ensure that CCE is deployed on standalone mode	Installation Type: **Standalone CCE or First CCE in HA** Site Directory: path to shared directory where CCE files will be stored User: **Skype for Business Online admin user name** Password: Skype for Business Online admin password
CCE Gateway configuration (step) During the CCE gateway configuration, following mediation server options must be configured	EnableReferSupport: **False** EnableFastFailoverTimer: **False** ForwardPAI: **False** ForwardCallHistory: **True**
Mediation Server "Manual configuration" Following mediation server parameters must be configured manually through PowerShell Online Interface In addition to above configured parameters To configure the mediation server trunk with VISIT SIP parameters: - Logon the mediation server using the CCE domain - Open PS console and execute the following cmdlet Set-CsTrunkconfiguration -RTCPActiveCalls *$false* -RTCPCallsOnHold *$false* -SRTPMode *Optional*	RTCPActiveCalls: $**False** RTCPCallsOnHold: $**False** SRTPMode: **Optional** **WARNING:** The manual configuration will be lost after each CCE update.
AudioCodes SBC Configuration Wizard (wizard version min 2.20)	
Product (Step 1 of 7) Choose product type and version:	Product: **Mediant 800, 1000 or software** depending on the Gateway type used for the deployment Version: **7.2** Use defaults from template must be **checked** End Customer: **corresponds to customer name ex: "OBS"** Country: **corresponds to customer country ex: "France"** Integrator: **if needed corresponds to integrator name ex: "OBS"** Installer: **if needed corresponds to installer name ex: "OBS"**
General Setup (Step 2 of 7) Choose application type, configuration template and network setup	Application: **Cloud Connector (CCE) Appliance** Equipment (interop): **SIP Trunk** SIP Trunk: **Orange BTIP SIP Trunk** Network Setup: **One port:LAN**
System Configuration (Step 3 of 7) Configure system parameters	Primary NTP Server: **"Optional"** NTP server IP address Secondary NTP Server: **"Optional"** backup NTP server IP address Time Zone: depending on customer local time zone "**default value GMT"** Web Interface: **HTTPS**

Menu	Value
	CLI Interface: **SSH** Enable Syslog: **Checked** Syslog IP: **IP address of the syslog server** Local DNS Table**: Unchecked**
User Management	
LAN Interface Configuration (Step 4 of 7) Configure LAN network interface	Physical Port: **Group 1(GE_1)** Vlan ID: **Untagged** IP address: **SBC IP address** (ex: 192.168.0.2) Subnet mask: **SBC subnet mask** (ex:255.255.0.0) Default Gateway: **SBC default gateway ip address** (ex:192.168.0.1) Primary DNS: **IP address of the DNS server used by the SBC** Secondary DNS: **"Optional"** OAM Interface: **LAN**
IP-PBX Configuration (Step 5 of 7) Configure Microsoft Skype CCE address and communication protocol details	Address: **Mediation Server IP address** Backup Address: **Empty** SIP Domain: **CCE FQDN** Keep Alive: **Checked** Transport Type: **TCP** Destination Port: **5068** Listening Port: **5068** Media Protocol: **RTP** Base Port: **6000** Number of Sessions: **1000**
SIP Trunk Configuration (Step 6 of 7) Configure Orange BTIP SIP Trunk Address and communication protocol details	Address: **aSBC Nominal Address** Backup Address: **aSBC Backup Address** SIP Domain: **Empty** Keep Alive: **Checked** Transport Type: **TCP** Destination Port: **5060** Listening Port: **5060** Media Protocol: **RTP** Base Port: **16400** Number of Sessions: **1000** Account Type: **None** Trunk Main Line: **Empty**
Number Manipulation and routing (Step 7 of 7) "Optional" Configure number manipulation rules and routing policy	Check needed manipulation type and fill: Prefix Remove: corresponds to number of digits to remove Add: corresponds to number of digits to add

7.3 High availability specific configuration

Menu	Value
Cloud Connector Edition 1 Wizard (version 2.1.0.22)	
CCE General Information (step) During wizard installation ensure that CCE is deployed on standalone mode	Installation Type: **Standalone CCE or First CCE in HA** Site Directory: path to shared directory where CCE 1 files will be stored User: **Skype for Business Online admin user name** Password: Skype for Business Online admin password
CCE Gateway configuration (step) During the CCE gateway configuration, following mediation server options must be configured	EnableReferSupport: **False** EnableFastFailoverTimer: **False** ForwardPAI: **False** ForwardCallHistory: **True**
Mediation Server "Manual configuration" Following mediation server parameters must be configured manually through PowerShell Online Interface In addition to above configured parameters To configure the mediation server trunk with VISIT SIP parameters: - Logon the mediation server using the CCE domain - Open PS console and execute the following cmdlet Set-CsTrunkconfiguration -RTCPActiveCalls *$false* -RTCPCallsOnHold *$false* -SRTPMode *Optional*	RTCPActiveCalls: $**False** RTCPCallsOnHold: $**False** SRTPMode: **Optional** **WARNING:** The manual configuration will be lost after each CCE update.
Cloud Connector Edition 2 Wizard (version 2.1.0.22)	
CCE General Information (step) During wizard installation ensure that CCE is deployed on standalone mode	Installation Type: **HA** Site Directory: path to shared directory where CCE 1 installation files were stored User: **Skype for Business Online admin user name** Password: Skype for Business Online admin password
CCE Gateway configuration (step) During the CCE gateway configuration, following mediation server options must be configured	EnableReferSupport: **False** EnableFastFailoverTimer: **False** ForwardPAI: **False** ForwardCallHistory: **True**
Mediation Server "Manual configuration" Following mediation server parameters must be configured manually through PowerShell Online Interface In addition to above configured parameters To configure the mediation server trunk with VISIT SIP parameters: - Logon the mediation server using the CCE domain - Open PS console and execute the following cmdlet Set-CsTrunkconfiguration -RTCPActiveCalls *$false* -RTCPCallsOnHold *$false* -SRTPMode *Optional*	RTCPActiveCalls: $**False** RTCPCallsOnHold: $**False** SRTPMode: **Optional** **WARNING:** The manual configuration will be lost after each CCE update.
AudioCodes SBC 1 Configuration Wizard (wizard version min 2.20)	
Product (Step 1 of 7) Choose product type and version:	Product: **Mediant 800, 1000 or software** depending on the Gateway type used for the deployment Version: **7.2**

Menu	Value
	Use defaults from template must be **checked** End Customer: **corresponds to customer name ex: "OBS"** Country: **corresponds to customer country ex: "France"** Integrator: **if needed corresponds to integrator name ex: "OBS"** Installer: **if needed corresponds to installer name ex: "OBS"**
General Setup (Step 2 of 7) Choose application type, configuration template and network setup	Application: **Cloud Connector (CCE) Appliance** Equipment (interop): **SIP Trunk** SIP Trunk: **Orange BTIP SIP Trunk** Network Setup: **One port:LAN**
System Configuration (Step 3 of 7) Configure system parameters	Primary NTP Server: **"Optional"** NTP server IP address Secondary NTP Server: **"Optional"** backup NTP server IP address Time Zone: depending on customer local time zone "**default value GMT"** Web Interface: **HTTPS** CLI Interface: **SSH** Enable Syslog: **Checked** Syslog IP: **IP address of the syslog server** Local DNS Table**: Unchecked**
User Management	
LAN Interface Configuration (Step 4 of 7) Configure LAN network interface	Physical Port: **Group 1(GE_1)** Vlan ID: **Untagged** IP address: **SBC IP address** (ex: 192.168.0.2) Subnet mask: **SBC subnet mask** (ex:255.255.0.0) Default Gateway: **SBC default gateway ip address** (ex:192.168.0.1) Primary DNS: **IP address of the DNS server used by the SBC** Secondary DNS: **"Optional"** OAM Interface: **LAN**
IP-PBX Configuration (Step 5 of 7) Configure Microsoft Skype CCE address and communication protocol details	Address: **Mediation Server IP address** Backup Address: **Empty** SIP Domain: **CCE FQDN** Keep Alive: **Checked** Transport Type: **TCP** Destination Port: **5068** Listening Port: **5068** Media Protocol: **RTP** Base Port: **6000** Number of Sessions: **1000**
SIP Trunk Configuration (Step 6 of 7) Configure Orange BTIP SIP Trunk Address and communication protocol details	Address: **aSBC Nominal Address** Backup Address: **aSBC Backup Address** SIP Domain: **Empty** Keep Alive: **Checked**

Menu	Value
	Transport Type: **TCP** Destination Port: **5060** Listening Port: **5060** Media Protocol: **RTP** Base Port: **16400** Number of Sessions: **1000** Account Type: **None** Trunk Main Line: **Empty**
Number Manipulation and routing (Step 7 of 7) "Optional" Configure number manipulation rules and routing policy	Check needed manipulation type and fill: Prefix Remove: corresponds to number of digits to remove Add: corresponds to number of digits to add
SBC 1 High Availability IP interface configuration Configure IP interface for HA mode: On the SBC1 WebUi interface > Setup menu > IP network > IP interface > Add new IP interface for HA	Name: **HA** Application Type: **MAINTENANCE** Ethernet Device: **HA Interface** IP Address: **SBC IP address to use for HA** Prefix Length: **Subnet length prefix (ex:30)**
SBC 1 High Availability Ethernet Device configuration Configure Ethernet device for HA mode: On the SBC1 WebUi interface > Setup menu > IP network > Ethernet devices > Add new Ethernet device for HA	Name: **HA** VLAN ID: **99** Underlying interface: **HA Group** Tagging: **Untagged** Prefix Length: **1500**
SBC 1 High Availability Ethernet Group configuration Configure Ethernet group for HA mode: On the SBC1 WebUi interface > Setup menu > IP network > Ethernet groups > Add new Ethernet group for HA	Index: **The number of index (ex:3)** Mode: **Single or REDUN_2RX1_1TX** Member1: **HA Physical port** Member2: **Only in case of redundant mode, HA second port**
SBC 1 High Availability Settings On the SBC1 WebUi interface > Setup menu > IP network > HA settings	HA Remote Address: **The IP address of the second SBC(ex:192.168.1.1)** HA Device name: **The local SBC device name (ex: SBC2)** Redundant HA device name: **The distant SBC HA device name (ex: SBC1)**
SBC 1 High Availability .INI configuration file export Export the SBC1 .INI file including HA availability configuration	Check needed manipulation type and fill: Prefix Remove: corresponds to number of digits to remove Add: corresponds to number of digits to add
SBC 1 High Availability .INI configuration file modification Modify the SBC1 .INI file including HA availability configuration	HA Remote Address: **The IP address of the second SBC(ex:192.168.1.2)** HAUnitIdName: **The local SBC device name (ex: SBC1)**
SBC 2 High Availability settings Access the SBC2 using **its default IP address**	Import the modified .INI file configuration on the SBC2

7.4 Nominal/backup mode specific configuration

Menu	Value
Cloud Connector Edition Wizard (version 2.1.0.22)	
CCE General Information (step) During wizard installation ensure that CCE is deployed on standalone mode	Installation Type: **Standalone CCE or First CCE in HA** Site Directory: path to shared directory where CCE files will be stored User: **Skype for Business Online admin user name** Password: Skype for Business Online admin password
CCE Gateway configuration (step) During the CCE gateway configuration, following mediation server options must be configured	EnableReferSupport: **False** EnableFastFailoverTimer: **False** ForwardPAI: **False** ForwardCallHistory: **True**
Mediation Server "Manual configuration" Following mediation server parameters must be configured manually through PowerShell Online Interface In addition to above configured parameters To configure the mediation server trunk with VISIT SIP parameters: - Logon the mediation server using the CCE domain - Open PS console and execute the following cmdlet Set-CsTrunkconfiguration -RTCPActiveCalls *$false* -RTCPCallsOnHold *$false* -SRTPMode *Optional*	RTCPActiveCalls: $**False** RTCPCallsOnHold: $**False** SRTPMode: **Optional** **WARNING:** The manual configuration will be lost after each CCE update.
Same configuration steps must be performed on All needed CCEs	
AudioCodes SBC Configuration Wizard (wizard version min 2.20)	
Product (Step 1 of 7) Choose product type and version:	Product: **Mediant 800, 1000 or software** depending on the Gateway type used for the deployment Version: **7.2** Use defaults from template must be **checked** End Customer: **corresponds to customer name ex: "OBS"** Country: **corresponds to customer country ex: "France"** Integrator: **if needed corresponds to integrator name ex: "OBS"** Installer: **if needed corresponds to installer name ex: "OBS"**
General Setup (Step 2 of 7) Choose application type, configuration template and network setup	Application: **Cloud Connector (CCE) Appliance** Equipment (interop): **SIP Trunk** SIP Trunk: **Orange BTIP SIP Trunk** Network Setup: **One port:LAN**
System Configuration (Step 3 of 7) Configure system parameters	Primary NTP Server: **"Optional"** NTP server IP address Secondary NTP Server: **"Optional"** backup NTP server IP address Time Zone: depending on customer local time zone "**default value GMT"**

Menu	Value
	Web Interface: **HTTPS** CLI Interface: **SSH** Enable Syslog: **Checked** Syslog IP: **IP address of the syslog server** Local DNS Table**: Unchecked**
User Management	
LAN Interface Configuration (Step 4 of 7) Configure LAN network interface	Physical Port: **Group 1(GE_1)** Vlan ID: **Untagged** IP address: **SBC IP address** (ex: 192.168.0.2) Subnet mask: **SBC subnet mask** (ex:255.255.0.0) Default Gateway: **SBC default gateway ip address** (ex:192.168.0.1) Primary DNS: **IP address of the DNS server used by the SBC** Secondary DNS: **"Optional"** OAM Interface: **LAN**
IP-PBX Configuration (Step 5 of 7) Configure Microsoft Skype CCE address and communication protocol details	Address: **Mediation Server IP address** Backup Address: **Empty** SIP Domain: **CCE FQDN** Keep Alive: **Checked** Transport Type: **TCP** Destination Port: **5068** Listening Port: **5068** Media Protocol: **RTP** Base Port: **6000** Number of Sessions: **1000**
SIP Trunk Configuration (Step 6 of 7) Configure Orange BTIP SIP Trunk Address and communication protocol details	Address: **aSBC Nominal Address** Backup Address: **aSBC Backup Address** SIP Domain: **Empty** Keep Alive: **Checked** Transport Type: **TCP** Destination Port: **5060** Listening Port: **5060** Media Protocol: **RTP** Base Port: **16400** Number of Sessions: **1000** Account Type: **None** Trunk Main Line: **Empty**
Number Manipulation and routing (Step 7 of 7) "Optional" Configure number manipulation rules and routing policy	Check needed manipulation type and fill: Prefix Remove: corresponds to number of digits to remove Add: corresponds to number of digits to add
SBC 1 Nominal and Backup configuration On the SBC1 WebUi interface > Setup menu > Signalling & Media > Proxy > Skype proxy set	Name: **ProxySet_Skype** SBC IPv4 SIP interface: **SIP interface Skype** Proxy Hot Swap: **Enable** Proxy Load Balancing Method: **Random Weights**
Same configuration steps must be performed on both SBCs	

7.5 Round-Robin mode specific configuration

Menu	Value
Cloud Connector Edition Wizard (version 2.1.0.22)	
CCE General Information (step) During wizard installation ensure that CCE is deployed on standalone mode	Installation Type: **Standalone CCE or First CCE in HA** Site Directory: path to shared directory where CCE files will be stored User: **Skype for Business Online admin user name** Password: Skype for Business Online admin password
CCE Gateway configuration (step) During the CCE gateway configuration, following mediation server options must be configured	EnableReferSupport: **False** EnableFastFailoverTimer: **False** ForwardPAI: **False** ForwardCallHistory: **True**
Mediation Server "Manual configuration" Following mediation server parameters must be configured manually through PowerShell Online Interface In addition to above configured parameters To configure the mediation server trunk with VISIT SIP parameters: - Logon the mediation server using the CCE domain - Open PS console and execute the following cmdlet Set-CsTrunkconfiguration -RTCPActiveCalls *$false* -RTCPCallsOnHold *$false* -SRTPMode *Optional*	RTCPActiveCalls: $**False** RTCPCallsOnHold: $**False** SRTPMode: **Optional** **WARNING:** The manual configuration will be lost after each CCE update.
Same configuration steps must be performed on both CCEs	
AudioCodes SBC Configuration Wizard (wizard version min 2.20)	
Product (Step 1 of 7) Choose product type and version:	Product: **Mediant 800, 1000 or software** depending on the Gateway type used for the deployment Version: **7.2** Use defaults from template must be **checked** End Customer: **corresponds to customer name ex: "OBS"** Country: **corresponds to customer country ex: "France"** Integrator: **if needed corresponds to integrator name ex: "OBS"** Installer: **if needed corresponds to installer name ex: "OBS"**
General Setup (Step 2 of 7) Choose application type, configuration template and network setup	Application: **Cloud Connector (CCE) Appliance** Equipment (interop): **SIP Trunk** SIP Trunk: **Orange BTIP SIP Trunk** Network Setup: **One port:LAN**
System Configuration (Step 3 of 7) Configure system parameters	Primary NTP Server: **"Optional"** NTP server IP address Secondary NTP Server: **"Optional"** backup NTP server IP address Time Zone: depending on customer local time zone "**default value GMT**"

Menu	Value
	Web Interface: **HTTPS** CLI Interface: **SSH** Enable Syslog: **Checked** Syslog IP: **IP address of the syslog server** Local DNS Table**: Unchecked**
User Management	
LAN Interface Configuration (Step 4 of 7) Configure LAN network interface	Physical Port: **Group 1(GE_1)** Vlan ID: **Untagged** IP address: **SBC IP address** (ex: 192.168.0.2) Subnet mask: **SBC subnet mask** (ex:255.255.0.0) Default Gateway: **SBC default gateway ip address** (ex:192.168.0.1) Primary DNS: **IP address of the DNS server used by the SBC** Secondary DNS: **"Optional"** OAM Interface: **LAN**
IP-PBX Configuration (Step 5 of 7) Configure Microsoft Skype CCE address and communication protocol details	Address: **Mediation Server IP address** Backup Address: **Empty** SIP Domain: **CCE FQDN** Keep Alive: **Checked** Transport Type: **TCP** Destination Port: **5068** Listening Port: **5068** Media Protocol: **RTP** Base Port: **6000** Number of Sessions: **1000**
SIP Trunk Configuration (Step 6 of 7) Configure Orange BTIP SIP Trunk Address and communication protocol details	Address: **aSBC Nominal Address** Backup Address: **aSBC Backup Address** SIP Domain: **Empty** Keep Alive: **Checked** Transport Type: **TCP** Destination Port: **5060** Listening Port: **5060** Media Protocol: **RTP** Base Port: **16400** Number of Sessions: **1000** Account Type: **None** Trunk Main Line: **Empty**
Number Manipulation and routing (Step 7 of 7) "Optional" Configure number manipulation rules and routing policy	Check needed manipulation type and fill: Prefix Remove: corresponds to number of digits to remove Add: corresponds to number of digits to add
SBC 1 Nominal and Backup configuration On the SBC1 WebUi interface > Setup menu > Signalling & Media > Proxy > Skype proxy set	Name: **ProxySet_Skype** SBC IPv4 SIP interface: **SIP interface Skype** Proxy Hot Swap: **Enable** Proxy Load Balancing Method: **Round Robin**
Same configuration steps must be performed on both SBCs	