



# SIP Trunk Configuration Guide

using



[www.cbeyond.net](http://www.cbeyond.net)

1-877-441-9783

*The information contained in this document is specific to setting up SIP connections between Vertical SBX IP 320 and Cbeyond. If you require assistance with this application, please contact Vertical Customer Support.*

# Cbeyond SIP Trunk Configuration

## SIP Trunk Setup

> PC Admin is needed to completely integrate SIP trunking with the SBX system.

After starting the PC Admin program, select the program settings from the Menu List tab as indicated in Steps 1-9 for the SBX system to work with the *Cbeyond* SIP trunks.

- 1.) **Station Attribute 1 (PGM 111)** – Program the SIP User ID Table that will correspond with the SIP account (programmed later in SIP Attributes 2).

The screenshot shows the SBX IP PCADMIN interface. The main window is titled 'Station Attribute I (PGM111)'. It features a menu list on the left, a station list table, and an 'Edit Tool' panel on the right. The 'SIP User ID Table' is highlighted in red in the 'Edit Tool' panel.

Station	Auto Speaker
100	ON
101	ON
102	ON
103	ON
104	ON
105	ON
106	ON
107	ON
108	ON
109	ON
110	ON
111	ON
112	ON
113	ON
114	ON
115	ON
116	ON
117	ON

Station	Auto Speaker	ICM Group	Error Tone for TAD	SLT Flash Drop	Loop LCR Account	VMIB MSG Type	OFFNET Call Forward	Forced HF	CIDSLT CAS GAIN	CIDSLT FSK GAIN	Caller V.Over	SIP User ID Table	Listen Redial DTMF
100	ON	1	OFF	OFF	OFF	LIFO	Enable	OFF	5	5	OFF	1	ON

- 2.) **CO Line List (PGM 140)** – If the SIP carrier will be providing DID (direct inward dialing) trunks, program the VoIB trunks used for SIP integration as ISDN DID.

The screenshot shows the SBX IP PCADMIN interface. The main window is titled 'CO Line List (PGM140/141/142/143)'. It features a menu list on the left, a table of CO Line List entries, and an 'Update Tool' panel at the bottom.

CO Num	Type	Day	Msg	Night	Msg	Weekend	Msg	In Demand	Msg	Lunch	Msg
7	ISDN DID										
8	ISDN DID										
9	ISDN DID										
10	ISDN DID										
11	ISDN DID										
12	ISDN DID										
13	ISDN DID										
14	ISDN DID										

Update Tool: CO Num: 7 - 14, Type: ISDN DID, Update, Close

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- CO Line ISDN Attributes (PGM 143)** – Set the COLP and CLIP Table Idx fields to 0, set the Call Type to Subscriber, the DID Conv Type to 2 (for integration with Flexible DID Table, PGM 231), set the DID Remove Num to 7 (or other entry if the carrier is sending more than 10 digits), and turn ISDN ENBLK Send to On.

The screenshot shows the SBX IP PCADMIN interface with the 'CO Line ISDN Attributes (PGM143)' window open. The window displays a table of CO Line ISDN Attributes and an 'Update Tool' section. The table has columns for CO Num, OLP Table Id, LIP Table Id, Call Type, DID Conv type, Remove Num, SDN ENBLK Send, CLI Transit, Num Plan for Calling, and Num Plan for Called. The 'Update Tool' section has checkboxes for various attributes and dropdown menus for their values. Red boxes highlight the following fields in the 'Update Tool':

- COLP Table Idx: 0
- CLIP Table Idx: 0
- Call Type: Subscriber
- DID Conv type: 2
- DID Remove Num: 7
- ISDN ENBLK Send: ON

CO Num	OLP Table Id	LIP Table Id	Call Type	DID Conv type	Remove Num	SDN ENBLK Send	CLI Transit	Num Plan for Calling	Num Plan for Called
7	0	0	Subscriber	2	7	ON	ORI	UNKNOWN	UNKNOWN
8	0	0	Subscriber	2	7	ON	ORI	UNKNOWN	UNKNOWN
9	0	0	Subscriber	2	7	ON	ORI	UNKNOWN	UNKNOWN

- COLP Table (PGM 201)** – Enter the COLP digits in Index 0 (this will correspond with PGM 143 buttons 1 and 2). The COLP digits will most likely be the same as the Authorization User Name in SIP Attributes 2.

The screenshot shows the SBX IP PCADMIN interface with the 'COLP Table (PGM201)' window open. The window displays a table of COLP Table entries and an 'Update Tool' section. The table has columns for Index and COLP Digits. The 'Update Tool' section has checkboxes for 'Update/Delete and next' and input fields for Index and COLP Digits. Red boxes highlight the following fields in the 'Update Tool':

- Index: 0
- COLP Digits: 1111111111

Index	COLP Digits
0	1111111111
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	

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- 5.) **Flexible DID Table (PGM 231)** – Program the ring assignments for the DID routes in this area. Use the last 3 digits of the inbound numbers that the SIP carrier provides as the table numbers.

- 6.) **Networking CO Line Attribute (PGM 322)** – Enter the VoIB trunks used for the SIP integration. Set the Networking CO Group to 0, the Networking CO Line Type to PSTN, Gatekeeper Usage to Off, VoIP mode to SIP, and program DTMF Mode to Inband DTMF, unless carrier requires 2833.

CO Num	Networking CO Group	Networking CO Line Type	Gatekeeper Usage	VOIP Mode	DTMF Mode
7	0	PSTN	OFF	SIP	Inband DTMF
8	0	PSTN	OFF	SIP	Inband DTMF
9	0	PSTN	OFF	SIP	Inband DTMF
10	0	PSTN	OFF	SIP	Inband DTMF
11	0	PSTN	OFF	SIP	Inband DTMF
12	0	PSTN	OFF	SIP	Inband DTMF
13	0	PSTN	OFF	SIP	Inband DTMF
14	0	PSTN	OFF	SIP	Inband DTMF

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- 7.) **VoIB/Gatekeeper Setting (PGM 340)** – Program the IP Address, Gateway Address, Subnet Mask, DNS address and Firewall address if you are using a one-to-one NAT through firewall/router for the VoIB card. Set the VoIB mode to SIP unless the system is networked with another system or you are using remote VOIP phones, if so, use the DUAL option. Note: if using one-to-one NAT, Vertical recommends using a SIP aware firewall.

IP Address: Public IP address or Private IP address if using one-to-one NAT of VOIB card

Gateway Address: IP address of upstream router

SUBNET mask: Subnet mask of IP address scheme

DNS Address: Cbeyond's DNS server IP Address provided in Cbeyond setup instructions

Firewall IP Address: Public IP address used for one-to-one NAT

Set VOIB mode to SIP if using SIP trunking only. Or Set VOIB mode to Dual if using SIP trunking along with remote phones or networking

- 8.) **SIP Attribute 1** – Program the Proxy Server Address, Proxy Registration Timer, Use Outbound Proxy check box, Primary and Secondary DNS Addresses, and Domain provided by the Cbeyond setup instructions. Enable the remaining checkboxes (Remote Party ID, 181 message and SIP name service if the SIP carrier requires them).

Outbound proxy address: the outbound proxy address will be provided to you in the Cbeyond SBC instructions document

SIP UDP port: Used to sent SIP messaging (Default 5060)

Proxy Registration Timer: Cbeyond requires 3600 second registration timer. (Default 3600 seconds)

Use Outbound Proxy: Sends all SIP messaging to Proxy Server listed in Proxy Server Address field. (Default is checked)

Primary DNS address: Use Cbeyond's DNS server

Secondary DNS address: Use DNS server from service provider

Domain: Use the proxy address provided in your Cbeyond SBC instructions document

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- 9.) **SIP Attributes 2** – Select the index number you used in **Station Attributes 1 (PGM 111)** Enter the User ID, Authentication User Name, Authentication User Password, and repeat the Authentication User Password which is provided by your Cbeyond setup letter. Reboot the SBX after finishing SIP programming.

The screenshot shows the SBX IP PCADMIN interface. The main window displays a table for SIP Attribute 2 with the following data:

Index	User ID	Authentication User Name	Authentication User Password	Contact Number	User ID Registr.	User ID Usage
1	1111111111@sipconnect-fca.at0.cbeyo	1111111111	11111111	11111111	Register	ON
2					Provision	OFF
3					Provision	OFF
4					Provision	OFF
5					Provision	OFF
6					Provision	OFF
7					Provision	OFF

The 'Update Tool' form at the bottom contains the following fields and values:

- Index: 1
- Contact Number: 11111111
- User ID Registration: Register
- User ID Usage:
- User ID: 1111111111@sipconnect-fca.at0.cbeyond.net
- Authentication User Name: 1111111111
- Authentication User Password: 11111111
- Authentication User Password Repeat: 11111111

Annotations in the image provide the following explanations:

- User ID Registration: Set to Register to have PBX send SIP registration** (points to the 'Register' dropdown)
- Contact Number: Is your Main TN number in the Cbeyond SBC instructions** (points to the 'Contact Number' field)
- User ID Usage: Checking this check box will send the user information in the SIP setup message** (points to the 'User ID Usage' checkbox)
- User ID: Is a combination of the User ID and Proxy Address provided in your Cbeyond SBC instructions** (points to the 'User ID' field)
- Authentication User Password and Authentication User Password Repeat: Will be your password for digest challenge provided in your Cbeyond SBC instructions** (points to the password fields)
- Authentication User Name: Is the username provided in your Cbeyond SBC instructions** (points to the 'Authentication User Name' field)

At the bottom of the interface, there are two status messages: "Message | SIP Attribute 2 : Update Success".

*This completes the SIP Trunk configuration process. If you have any other questions, please contact Vertical Customer Support for assistance*