



# SIP Trunk Configuration Guide

using



[www.bandwidth.com](http://www.bandwidth.com)

**1-800-808-5150**

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

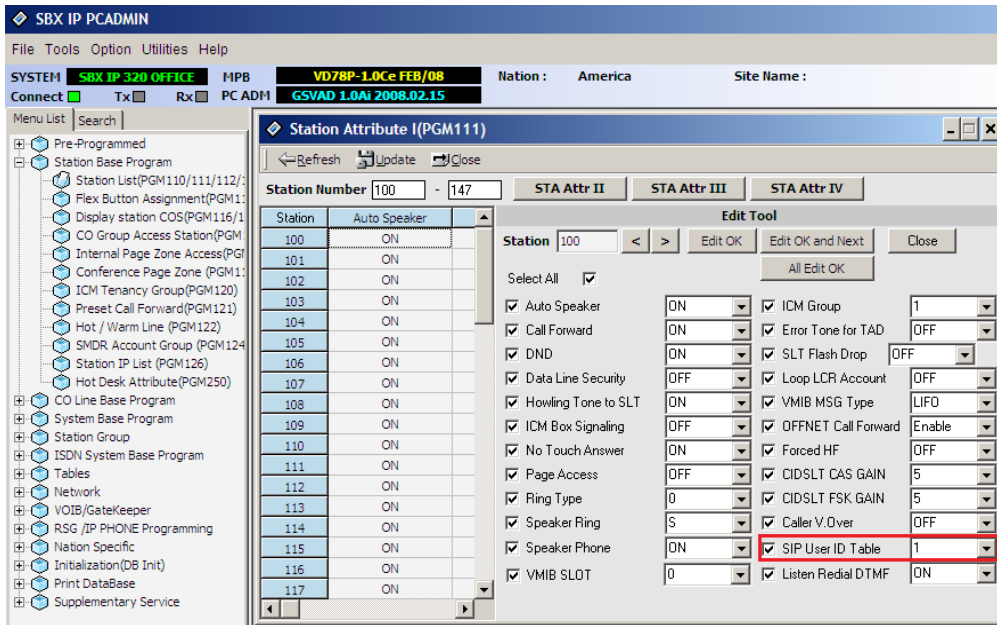
# Bandwidth SIP Trunk Configuration

## SIP Trunk Setup

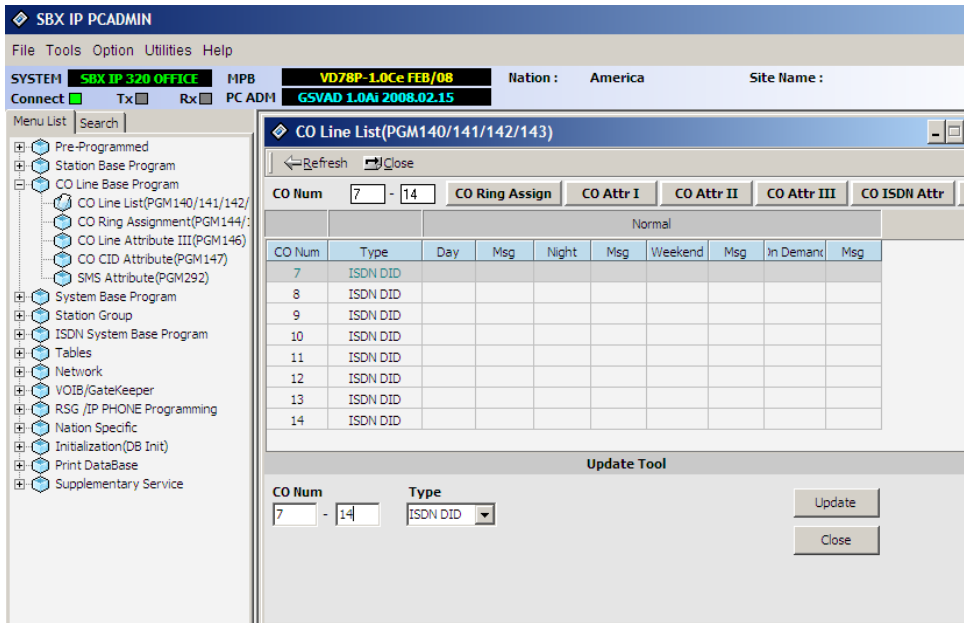
> PC Admin is needed to completely integrate SIP trunking with the SBX system.

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 *Bandwidth* 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).

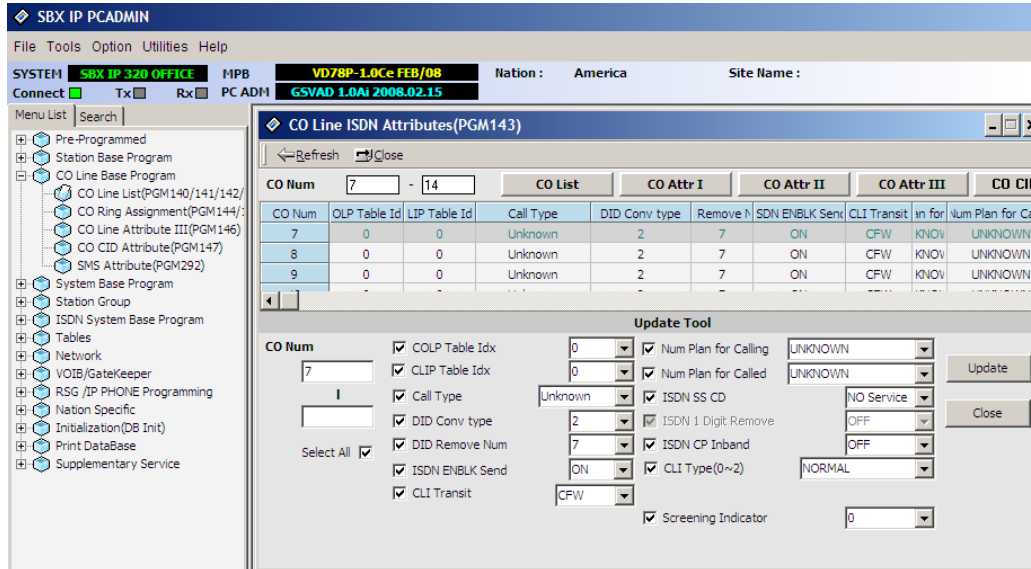


- 2.) **CO Line List (PGM 140)** – If the SIP carrier will be providing DID (direct inward dialing) trunks, program the VoIB trunks used for SIP integration as ISDN DID.

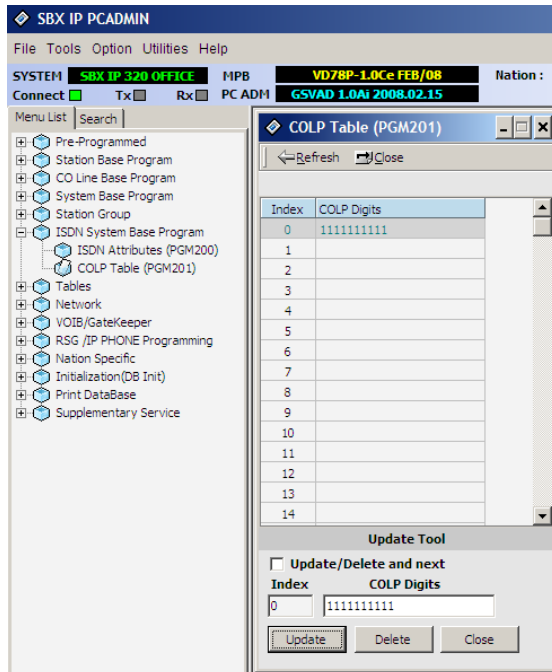


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- 3.) **CO Line ISDN Attributes (PGM 143)** – Set the COLP and CLIP Table Idx fields to 0, set the Call Type to Unknown, the DID Conv Type to 2 (for integration with Flexible DID Table, PGM 231), set the DID Remove Num to 7 (or other entry if the carrier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



- 4.) **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.



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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.

**Flexible DID Table(PGM231)**

Enter Table Range: 100 - 100 Refresh All Range Refresh

Index	Name	Day Type	Day Dest.	Night Type	Night Dest.	Weekend Type	Weekend Dest.	Reroute Type	Reroute Dest.
100		Station	100	Station	100	Station	100	Not Assigned	

**Update Tool**

Index: 100 Name: Update Delete All Initial All Delete Close

Edit with Range

Day Type: Station Day Dest.: 100 Night Type: Station Night Dest.: 100 Weekend Type: Station Weekend Dest.: 100 Reroute Type: Not Assigned Reroute Dest.:

- 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 the carrier requires 2833.

**Networking CO Line Attribute(PGM322)**

CO ISDN Attr: CO Num 7 - 14

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

**Update Tool**

CO Num: 7 - 14 Select All

Networking CO Group: 0  VOIP Mode: SIP

Networking CO Line Type: PSTN  DTMF Mode: Inband DTMF

Gatekeeper Usage: OFF Update Close

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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, if so, use the DUAL option. Program the DTMF Mode so it matches the same field in PGM 322.

The screenshot shows the SBX IP PCADMIN interface with the 'VOIB/GateKeeper Setting (PGM340/341)' window open. The window is divided into two tabs: 'SIP Attr 1' and 'SIP Attr 2'. The 'SIP Attr 1' tab is active, showing various configuration fields. The 'SIP Attr 2' tab is also visible, showing fields for GK Address, GK Find Address, GK Find Port, GK RAS Signal Port, GK Signal Port, and VOIB Terminal Alias.

Field	Value
IP Address	192.168.1.2
GATEWAY Address	192.168.1.1
SUBNET Mask	255.255.255.0
DNS Address	4.79.212.236
Default Codec	G.723.1
Default Gain	31
No Delay (TOS)	<input type="checkbox"/>
Throughput (TOS)	NORMAL
Reliability (TOS)	NORMAL
Trace Password	
Firewall IP Address	0.0.0.0
VoIB Mode	SIP
DSP Use Silence Detection	<input type="checkbox"/>
DSP Use Echo Canceler	<input checked="" type="checkbox"/>
DTMF Mode	Inband DTMF
Jitter Buffer	150
Voice Monitor	<input type="checkbox"/>
GK Usage	<input type="checkbox"/>
GK Call Mode	Direct
GK Open H245	<input type="checkbox"/>
GK H245 Tunneling	<input type="checkbox"/>
GK Pregranted Arq	<input type="checkbox"/>
GK Out of Band Flash	<input type="checkbox"/>
GK Time to live(sec)	30
H.323 Mode	FAST
Early H.245	<input type="checkbox"/>
H245Tunneling	<input type="checkbox"/>
TOS Precedence	0
GK Address	0.0.0.0
GK Find Address	224.0.1.41
GK Find Port	1718
GK RAS Signal Port	1719
GK Signal Port	1720
VOIB GK ID(~23chs)	
VOIB H323 ID(~23chs)	
VOIB E164 Addr.(~23dgt)	
VOIB Terminal Alias	1. <input type="text"/> 2. <input type="text"/> 3. <input type="text"/> 4. <input type="text"/>
Fax Mode	<input type="checkbox"/>

- 8.) **SIP Attribute 1** – Program the Proxy Server Address (216.82.224.202) Proxy Registration Timer, Use Outbound Proxy check box, Primary and Secondary DNS Addresses, and Domain provided by the SIP carrier. Enable the remaining checkboxes (Remote Party ID, 181 message, SIP name and 100 Rel Support service if the SIP carrier requires them.

The screenshot shows the SBX IP PCADMIN interface with the 'SIP Attribute 1' window open. The window is divided into two tabs: 'VOIB Setting' and 'SIP Attr 2'. The 'VOIB Setting' tab is active, showing various configuration fields. The 'SIP Attr 2' tab is also visible, showing fields for Proxy Server Address, Proxy Server Port, Proxy Registration Timer, Primary DNS Address, Secondary DNS Address, Domain, Connection Mode, 100Rel Support, Use Rport Method, Use Single Code Only, Remote Party ID, 181 Message, IP Centrex, SIP Name Service, Asserted ID Usage, Use Privacy, and Use Ext. No.

Field	Value
Proxy Server Address	4.79.212.236
Proxy Server Port	5060
Proxy Registration Timer	3600
Use Outbound Proxy	<input checked="" type="checkbox"/>
Primary DNS Address	4.79.212.236
Secondary DNS Address	216.82.224.202
Domain	4.79.212.236
Connection Mode	UDP
100Rel Support	<input checked="" type="checkbox"/>
Use Rport Method	<input type="checkbox"/>
Use Single Code Only	<input type="checkbox"/>
Remote Party ID	<input checked="" type="checkbox"/>
181 Message	<input checked="" type="checkbox"/>
IP Centrex	<input type="checkbox"/>
SIP Name Service	<input checked="" type="checkbox"/>
Asserted ID Usage	<input type="checkbox"/>
Use Privacy	<input type="checkbox"/>
Use Ext. No	<input type="checkbox"/>

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- 9.) **SIP Attributes 2** – Select the index number you used in **Station Attributes 1 (PGM 111)** Enter the User ID (*phone number@216.82.224.202*), Authentication User Name and set User ID Registration to provision.

The screenshot shows the SBX IP PCADMIN software interface. The main window is titled "SIP Attribute 2". The interface includes a menu list on the left, a main configuration area with a table of SIP attributes, and an update tool at the bottom.

**Menu List:**

- Pre-Programmed
- Station Base Program
- CO Line Base Program
- System Base Program
- Station Group
- ISDN System Base Program
- Tables
- Network
- VOIB/GateKeeper
  - VOIB/GateKeeper Setting(PGM)
  - SIP Attribute 1
  - SIP Attribute 2
- RSG /IP PHONE Programming
- Nation Specific
- Initialization(DB Init)
- Print DataBase
- Supplementary Service

**SIP Attribute 2 Table:**

Index	User ID	Authentication User Name	Authentication User Password	Contact Number	User ID Re
1	1111111111@4.79.212.236	1111111111			Provision
2					Provision
3					Provision
4					Provision
5					Provision
6					Provision
7					Provision
8					Provision
9					Provision
10					Provision
11					Provision
12					Provision

**Update Tool:**

Index: 1    Contact Number:    User ID Registration: Provision     User ID Usage    Asc Stn.   

User ID: 1111111111@4.79.212.236    Authentication User Name: 1111111111

Authentication User Password:    Authentication User Password Repeat:

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