



FIBERME Communications LLC.

Configuring FAG410X with 3CX

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OVERVIEW

This document describes basic configuration to interconnect 3CX Server and FAG410X. In this document, we are using FAG4108 as an example. The following methodology can be used for the FAG4104 as well. This is typically applied to the scenario where users would like to add a FAG410X not only as a remote extension but also as an external PSTN trunk.

There are two ways to set up the 3CX IP PBX with the FAG410X.

- **Method 1:** Configure FAG410X as a SIP Peer Trunk.
- **Method 2:** Register FAG410X on 3CX directly as an extension.

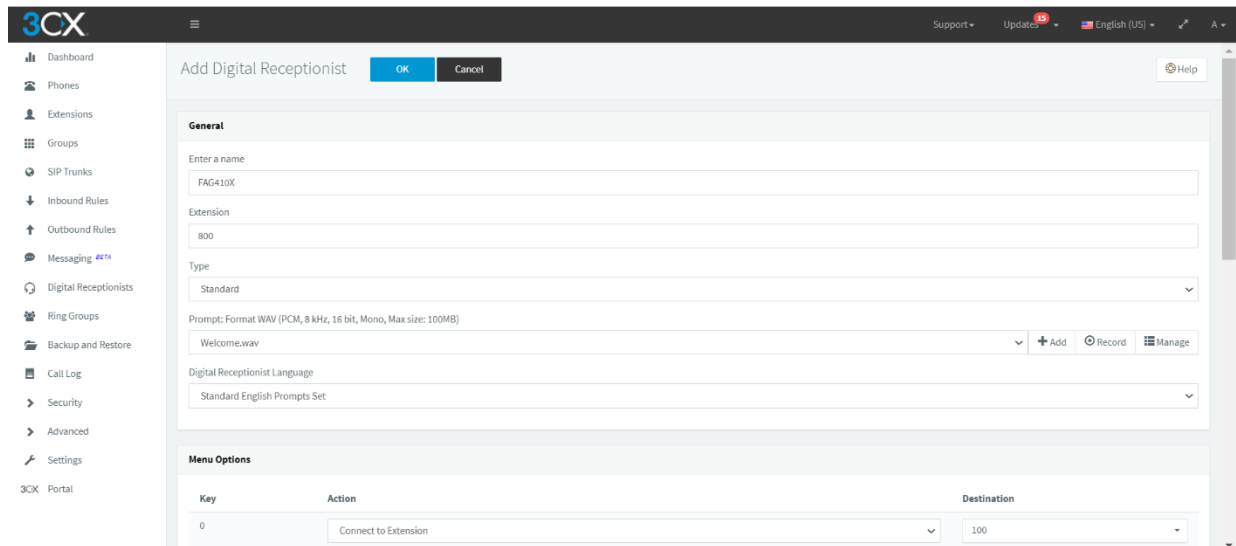


CONNECT 3CX TO FAG410X USING PEER SIP TRUNK

Create Digital Receptionist On 3CX

On the 3CX web GUI, create a Digital Receptionist extension under **Digital Receptionist** ->**Add**.

You can assign the " Menu Options " to different destinations.



The screenshot displays the 3CX web GUI interface for adding a new Digital Receptionist. The left sidebar contains navigation links: Dashboard, Phones, Extensions, Groups, SIP Trunks, Inbound Rules, Outbound Rules, Messaging, Digital Receptionists, Ring Groups, Backup and Restore, Call Log, Security, Advanced, Settings, and 3CX Portal. The main content area is titled 'Add Digital Receptionist' with 'OK' and 'Cancel' buttons. The 'General' section includes fields for 'Enter a name' (FAG410X), 'Extension' (800), 'Type' (Standard), and 'Prompt: Format WAV (PCM, 8 kHz, 16 bit, Mono, Max size: 100MB)' (Welcome.wav). The 'Digital Receptionist Language' is set to 'Standard English Prompts Set'. The 'Menu Options' section shows a table with one entry: Key '0', Action 'Connect to Extension', and Destination '100'.

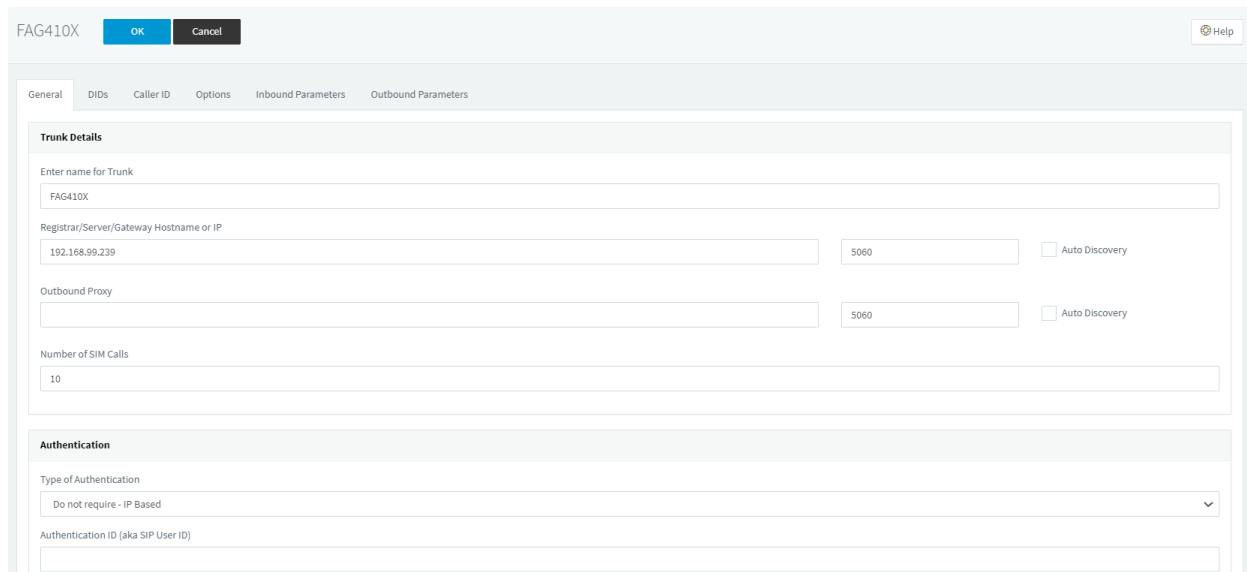
Key	Action	Destination
0	Connect to Extension	100

Figure 1: Create Digital Receptionist on 3CX



Create Peer SIP TRUNK On 3CX

On the 3CX web GUI, create a peer SIP trunk under **SIP Trunks** ->**Add SIP Trunk**. In this example, the FAG4108 IP address is 192.168.99.239.



The screenshot shows the 3CX web GUI interface for creating a new SIP trunk. The window title is 'FAG410X' with 'OK' and 'Cancel' buttons. The 'General' tab is selected. The 'Trunk Details' section includes: 'Enter name for Trunk' (FAG410X), 'Registrar/Server/Gateway Hostname or IP' (192.168.99.239), 'Outbound Proxy' (5060), and 'Number of SIM Calls' (10). There are also checkboxes for 'Auto Discovery'. The 'Authentication' section includes a dropdown for 'Type of Authentication' (Do not require - IP Based) and a field for 'Authentication ID (aka SIP User ID)'.

Figure 2: Create Peer SIP Trunk on 3CX

Configure Outbound Rule on 3CX

On 3CX web GUI, go to **Outbound Rules** ->**Add** to create a new outbound rule. This would allow the extension on 3CX to reach numbers in PSTN network via the peer SIP trunk we just configured.



General

Rule Name
FAG410X

Apply this rule to these calls

Calls to numbers starting with prefix
9

Calls from extension(s)
Calls from extension(s)

Calls to Numbers with a length of
Calls to Numbers with a length of

Calls from extension group(s)
[+ Add](#)

Make outbound calls on

Configure up to 5 backup routes for outgoing calls. Each route can be configured differently

Route	Rule	Strip Digits	Prepend	Outbound Caller ID
1	FAG410X	1		

Figure 3: Configure Outbound Rule on 3CX

In this example prefix "9", 9 is the first dialing digit and it will be stripped off when the call goes out.

Configure Inbound Rule on 3CX

On 3CX web GUI, go to **Inbound Rules** -> **Add DID Rule** to create a new inbound rule. In this example, we set the DID as **20000**, which will be used in the FAG410X call forward setting.

General

Name
FAG410X

DID/DDI
123456

Route calls to

Destination for calls during office hours
Extension
IVR 800 FAG410X

Destination for calls outside office hours
Extension
100

☐ Set up Specific Office Hours for this rule

☐ Play holiday prompt when it's a global holiday

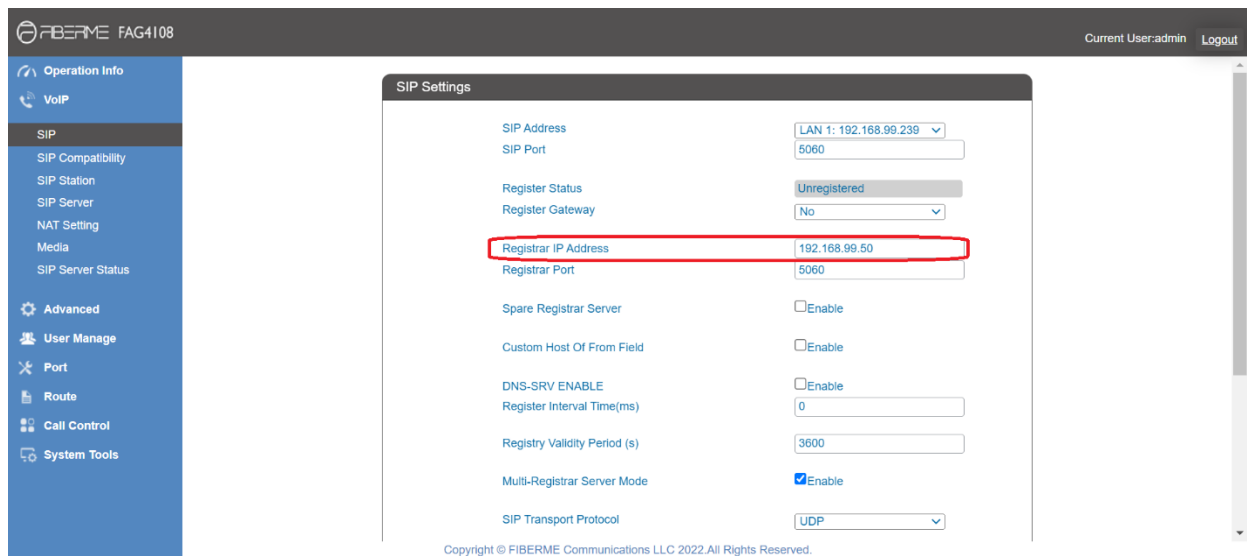
Figure 4: Configure Inbound Rule on 3CX

The default destination for calls is configured to IVR (Digital Receptionist). Ensure to select the proper IVR.



Connect FAG410X with 3CX

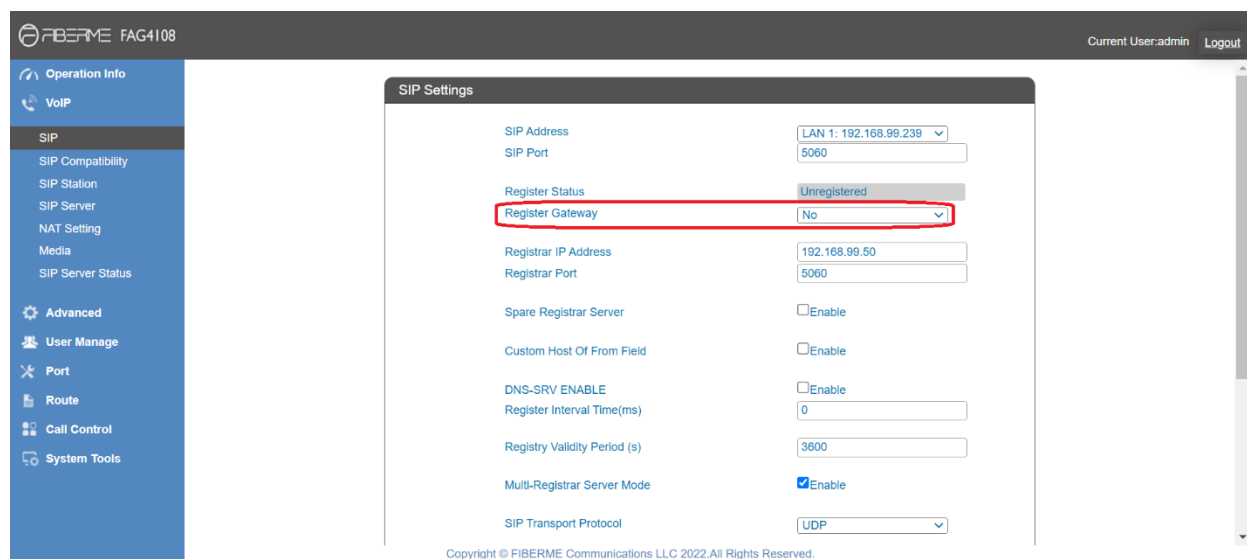
1. On the FAG410X web GUI, go to the **VoIP->SIP** page and enter the IP address of the 3CX Server that you are peering with.



The screenshot shows the FAG410X web GUI with the 'SIP Settings' page. The left sidebar contains a menu with 'VoIP' selected, and 'SIP' is highlighted under the 'VoIP' section. The main content area displays various SIP settings. The 'Registrar IP Address' field is highlighted with a red box and contains the value '192.168.99.50'. Other settings include 'SIP Address' (LAN 1: 192.168.99.239), 'SIP Port' (5060), 'Register Status' (Unregistered), 'Register Gateway' (No), 'Spare Registrar Server' (disabled), 'Custom Host Of From Field' (disabled), 'DNS-SRV ENABLE' (disabled), 'Register Interval Time(ms)' (0), 'Registry Validity Period (s)' (3600), 'Multi-Registrar Server Mode' (checked), and 'SIP Transport Protocol' (UDP).

Figure 5: Connect FAG410X with 3CX: Registrar IP Address

2. Please make sure the **Register Gateway** option under **VoIP-> SIP** is set to **No**. In the following example, 3CX Server has IP address 192.168.99.50.



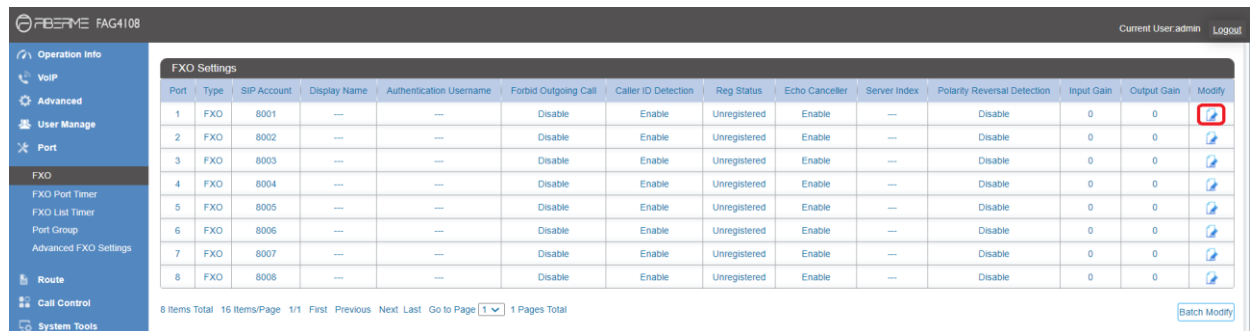
The screenshot shows the FAG410X web GUI with the 'SIP Settings' page. The left sidebar contains a menu with 'VoIP' selected, and 'SIP' is highlighted under the 'VoIP' section. The main content area displays various SIP settings. The 'Register Gateway' dropdown menu is highlighted with a red box and set to 'No'. Other settings include 'SIP Address' (LAN 1: 192.168.99.239), 'SIP Port' (5060), 'Register Status' (Unregistered), 'Registrar IP Address' (192.168.99.50), 'Registrar Port' (5060), 'Spare Registrar Server' (disabled), 'Custom Host Of From Field' (disabled), 'DNS-SRV ENABLE' (disabled), 'Register Interval Time(ms)' (0), 'Registry Validity Period (s)' (3600), 'Multi-Registrar Server Mode' (checked), and 'SIP Transport Protocol' (UDP).

Figure 6: Connect FAG410X with 3CX: Register Gateway



Configure FXO Port on FAG410X

1. Connect the PSTN line to the FAG410X FXO port.
2. On the FAG410X web GUI, go to the **Port->FXO** page and press Modify on the FXO port you will use.











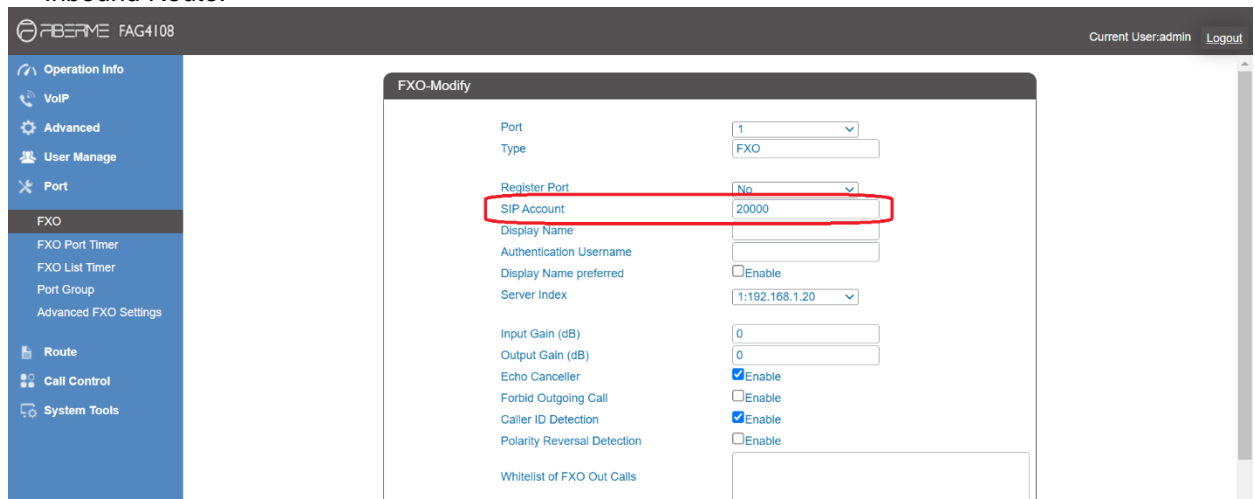
Port	Type	SIP Account	Display Name	Authentication Username	Forbid Outgoing Call	Caller ID Detection	Reg Status	Echo Canceller	Server Index	Polarity Reversal Detection	Input Gain	Output Gain	Modify
1	FXO	8001	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
2	FXO	8002	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
3	FXO	8003	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
4	FXO	8004	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
5	FXO	8005	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
6	FXO	8006	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
7	FXO	8007	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	
8	FXO	8008	---	---	Disable	Enable	Unregistered	Enable	---	Disable	0	0	

Figure 7: Configure FXO Port on FAG410X: Modify Port

3. Enter the SIP Account Number **20000** to be matched with the DID number we configured in 3CX Inbound Route.



FXO-Modify

Port: 1
Type: FXO

Register Port: No

SIP Account: 20000

Display Name:

Authentication Username:

Display Name preferred: ☐ Enable

Server Index: 1:192.168.1.20

Input Gain (dB): 0

Output Gain (dB): 0

Echo Canceller: ☒ Enable

Forbid Outgoing Call: ☐ Enable

Caller ID Detection: ☒ Enable

Polarity Reversal Detection: ☐ Enable

Whitelist of FXO Out Calls:

Figure 8: Configure FXO Port on FAG410X: Port Configurations



Create Port Group on FAG410X

1. On the FAG410X web GUI, go to the **Port->Port Group** page and press “Add New”.

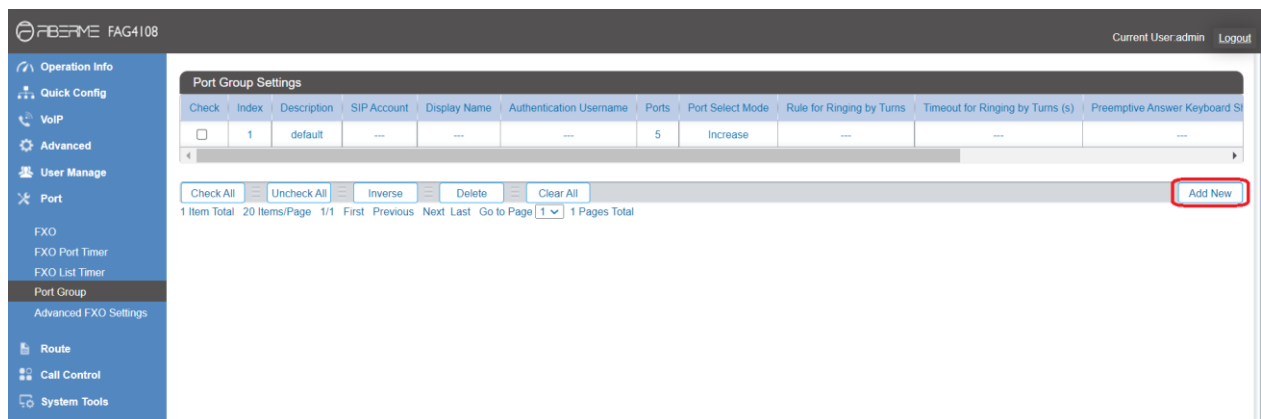


Figure 9: Create Port Group on FAG410X: Add New

2. Select the FXO port you will use.

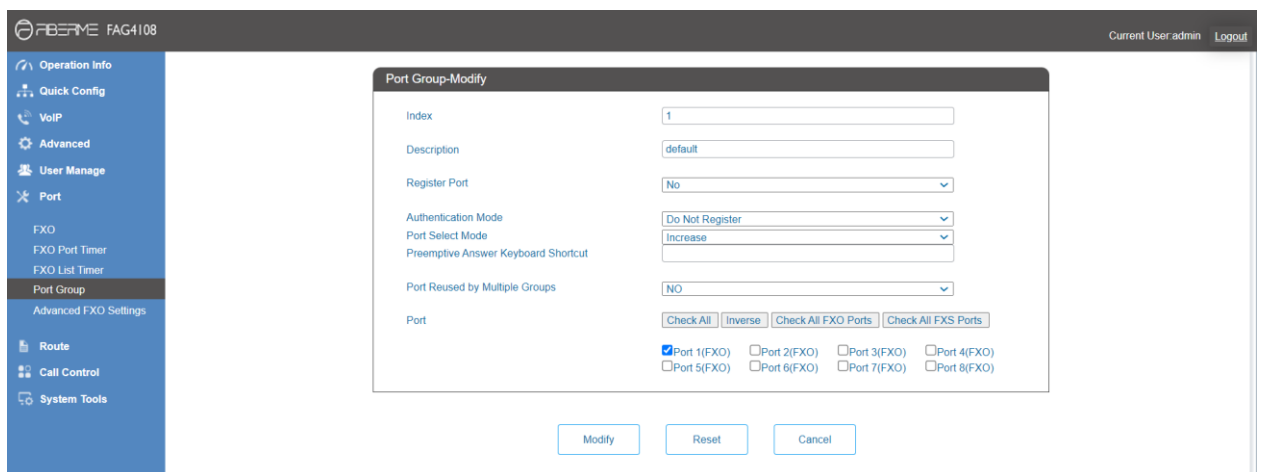


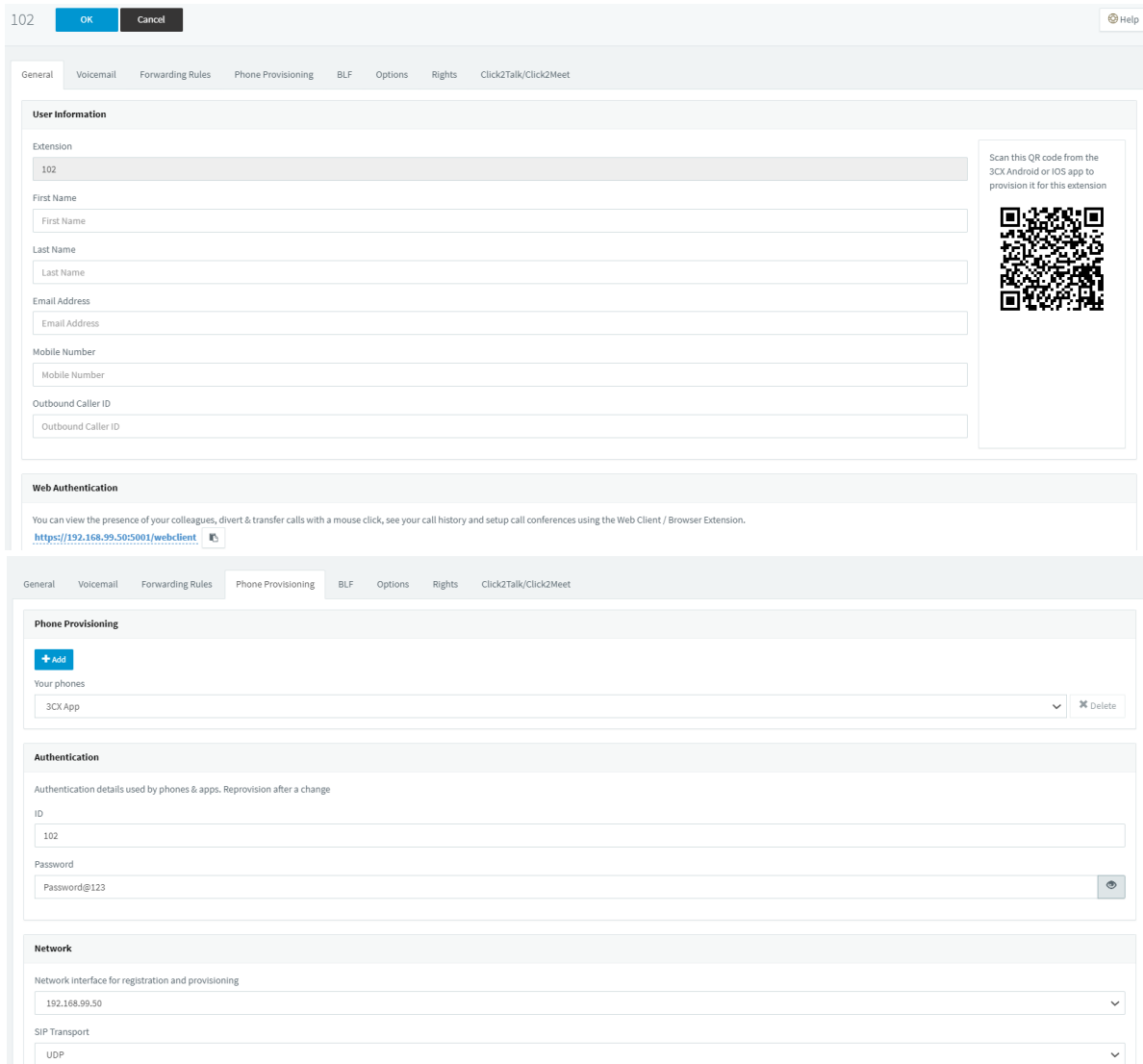
Figure 10: Create Port Group on FAG410X: Group Configurations



REGISTER FAG410X ON 3CX AS AN EXTENSION

Create SIP Extension on 3CX

To manually create new SIP user, go to 3CX **Web GUI** ->**Extensions**. Click on "Add" and a new dialog window will show for users to fill in the extension information.



102 OK Cancel Help

General Voicemail Forwarding Rules Phone Provisioning BLF Options Rights Click2Talk/Click2Meet

User Information

Extension
102

First Name
First Name

Last Name
Last Name

Email Address
Email Address

Mobile Number
Mobile Number

Outbound Caller ID
Outbound Caller ID

Scan this QR code from the 3CX Android or iOS app to provision it for this extension

Web Authentication

You can view the presence of your colleagues, divert & transfer calls with a mouse click, see your call history and setup call conferences using the Web Client / Browser Extension.
<https://192.168.99.50:5001/webclient>

General Voicemail Forwarding Rules Phone Provisioning BLF Options Rights Click2Talk/Click2Meet

Phone Provisioning

+ Add

Your phones
3CX App

Authentication

Authentication details used by phones & apps. Reprovision after a change

ID
102

Password
Password@123

Network

Network interface for registration and provisioning
192.168.99.50

SIP Transport
UDP

Figure 11: Create SIP Extension on 3CX

Configure FAG410X SIP Account as a Registered Extension on 3CX

Under FAG410X **web GUI**->**VoIP**->**SIP**, please set Register Gateway to Yes, then enter SIP Extension information created earlier in 3CX. In this example, extension 102 is used in order to register FAG410X as an extension user on 3CX.



SIP Settings

SIP Address: LAN 1: 192.168.99.239
 SIP Port: 5060

Register Status: Unregistered

Register Gateway: Yes
 SIP Account: 102
 Password:

Registrar IP Address: 192.168.99.50
 Registrar Port: 5060

Spare Registrar Server: ☐ Enable

Custom Host Of From Field: ☐ Enable

DNS-SRV ENABLE: ☐ Enable
 Register Interval Time(ms): 0
 Registry Validity Period (s): 3600

Multi-Registrar Server Mode: ☒ Enable

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Figure 12: FAG410X SIP Account Settings

Under FAG410X web GUI, **VoIP->SIP**, please fill in 3CX information as explained in method 1.

SIP Settings

SIP Address: LAN 1: 192.168.99.239
 SIP Port: 5060

Register Status: Registered

Register Gateway: Yes
 SIP Account: 102
 Password:

Registrar IP Address: 192.168.99.50
Registrar Port: 5060

Spare Registrar Server: ☐ Enable

Custom Host Of From Field: ☐ Enable

DNS-SRV ENABLE: ☐ Enable
 Register Interval Time(ms): 0
 Registry Validity Period (s): 3600

Multi-Registrar Server Mode: ☒ Enable

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Figure 13: FAG410X Registrar IP Address

We can check 3CX SIP Extension Status to see if FAG410X has been successfully registered as an extension device. The green icon indicates that FAG410X is registered on 3CX.

Extensions								
<div> + Add Edit Delete Import Export Regenerate Send Welcome Email Status Copy Extension </div>								
Search ...								
<input type="checkbox"/>	Ext.	First Name	Last Name	Email	Mobile	Caller ID	Phones	Synced with
<input type="checkbox"/>	100			sohaib@fiberme.net			1	<input checked="" type="checkbox"/>
<input type="checkbox"/>	102						1	<input checked="" type="checkbox"/>

Figure 14: 3CX - SIP Extension Status

Now FAG410X is registered at 3CX as an extension device. Please refer to method 1 in the previous section to configure FXO Port settings on FAG410X.



FAG410X CALL Routing

Configure IP to Tel on FAG410X

1. On the FAG410X web GUI, go to the **Route-> IP→TEL** page, Press “Add New”.

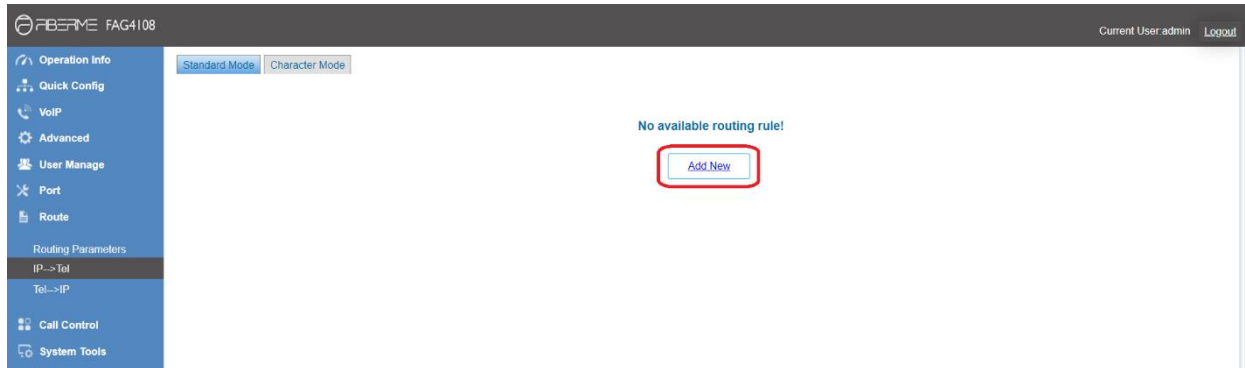


Figure 15: FAG410X – IP to TEL

2. Enter the 3CX Server IP address in “Source IP” and select the Port Group you will use from “Call Destination”.

Figure 16: IP to TEL Settings



Configure TEL to IP on FAG410X

1. On the FAG410X web GUI, go to the **Route-> TEL->IP** page, Press “Add New”.

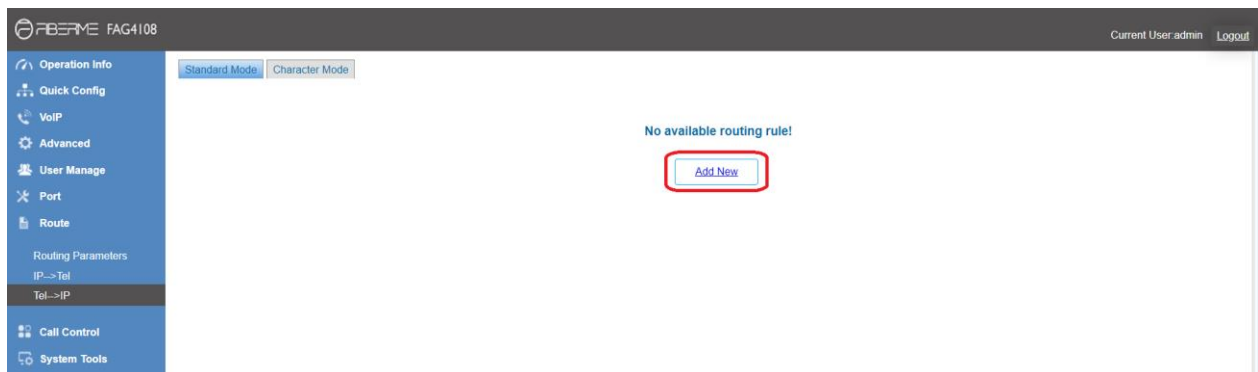


Figure 17: FAG410X – TEL to IP

2. Select the Port Group you will use from “Source Port Group” and enter the 3CX Server IP address in “Destination Address”.

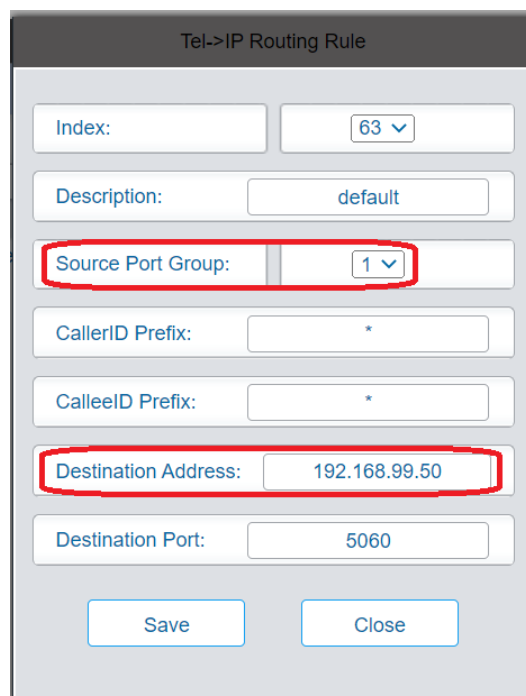


Figure 18: TEL to IP Settings

