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Configure FCM5404 IPPBX with FAG410X

- SIP Peer Trunk
- Inbound route
- Outbound route

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OVERVIEW

This document describes basic configuration to interconnect FCM5404 and FAG410X series.
In this document we are using FAG4108 as an example.

The following methodology can be used for FAG4104 as well, this is typically applied to the scenario where the users would like to add FAG410X as an external PSTN trunk.

There is a way to connect FCM5404 IPPBX with FAG4108 FXO Gateway.

Configure FAG4108 as peer SIP trunk with FCM5404.



TOPOLOGY

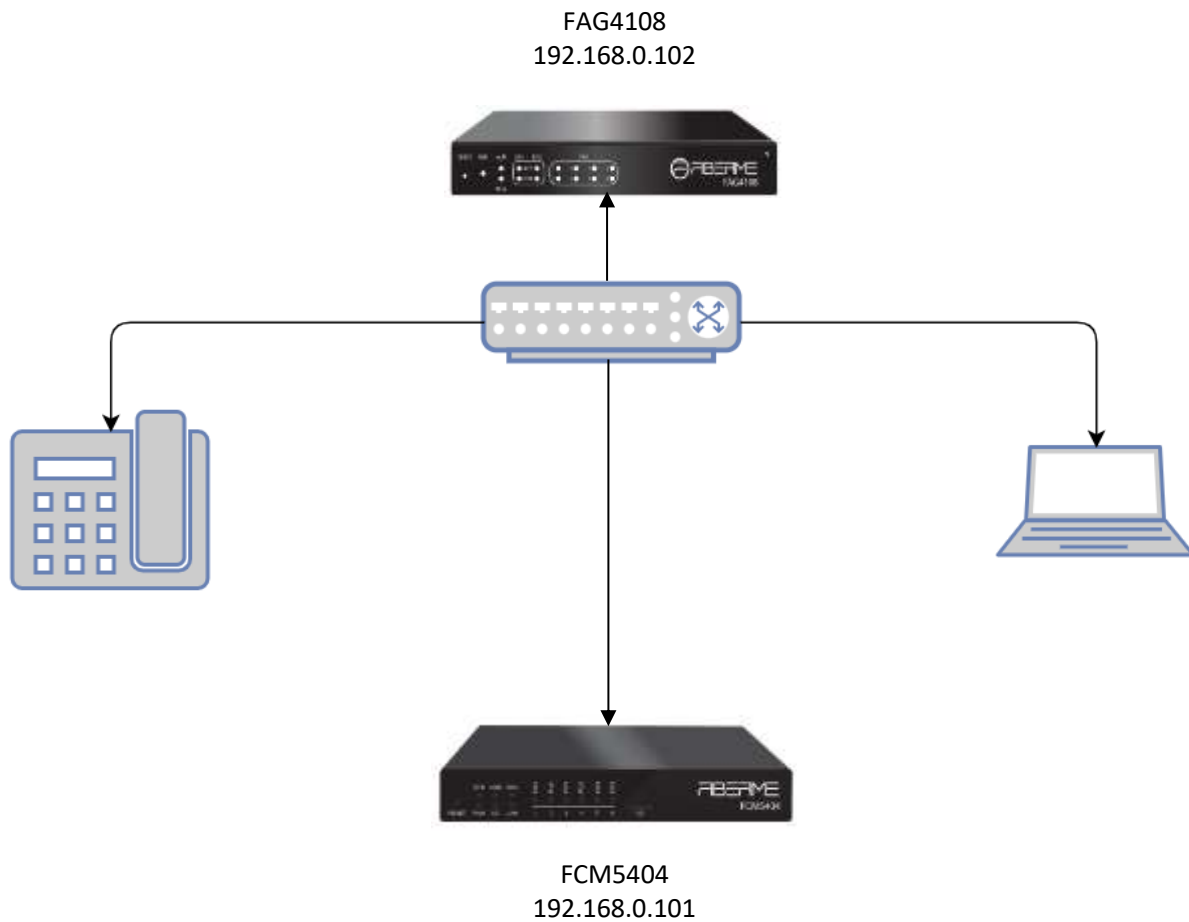


Figure 1: Connection Topology.

Connection Topology:

1. Connect FCM5404 direct to switch.
2. Connect FAG4108 direct to switch.
3. Connect the endpoints direct to switch e.g., phones and PCs.
4. For example, to start this scenario for configuring FCM5404 with FAG4108 you need to assign IP Address for each device, before connect devices to switch you must change IP addresses of them into the range of your local IP range.

Follow instructions below to configure IP addresses for FCM5404 and FAG4108 as following.



FCM5404 Network Setting

Connect your PC to FCM5404 LAN port direct with ethernet cable and make sure that your PC network is in the range of the LAN IP of the FCM5404, Default LAN IP is 192.168.0.101, Enter the FCM5404 IP in your browser to open web GUI, login with username and password are admin.

To know how to change IP address of PC click [here](#).

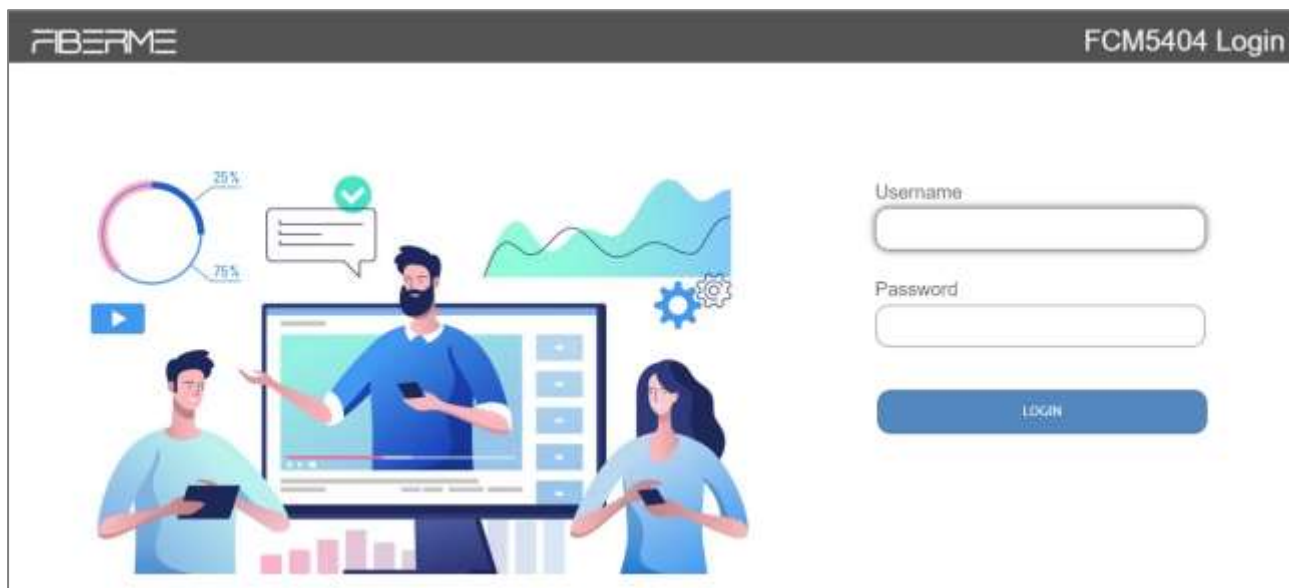


Figure2: Login into FCM5404

Go to “System Setting → Network Setting”.

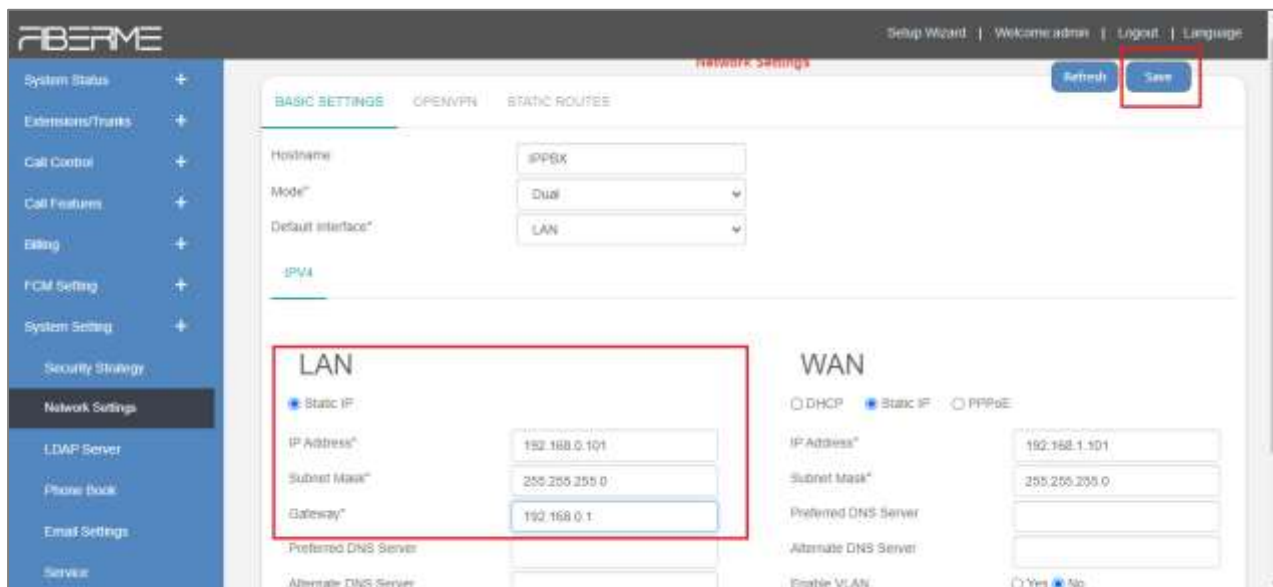


Figure 3: FCM5404 Network Setting

LAN IP is 192.168.0.101

In this scenario we will leave FCM5404 IP in default IP.

For further information about FCM5404 network “Mode” click [here](#).



FAG4108 Network Setting

Connect your PC to FAG4108 ETH1 port direct with ethernet cable and make sure that your PC is in the range of LAN1 IP of FAG4108, Default IP is 192.168.1.101, Enter FAG4108 IP into your browser to open FAG4108 web GUI, login with username and password are admin.

To know how to change IP address of PC click [here](#).

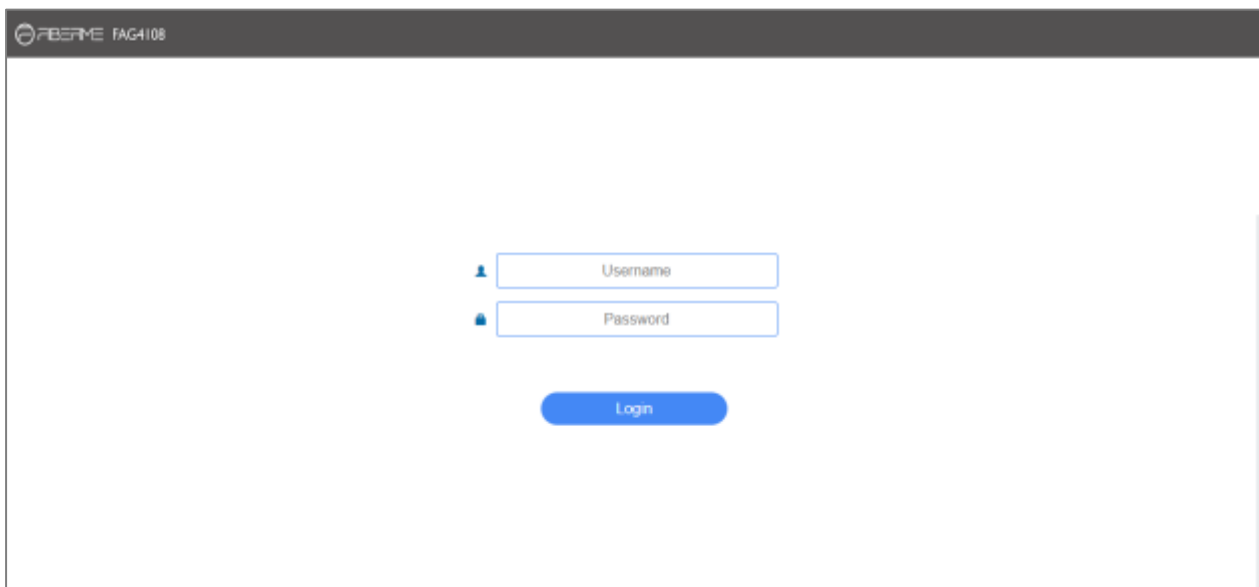


Figure 4: Login to FAG4108

Go to **“System Tools → Network”** and then change LAN1 IP address to 192.168.0.102, Subnet Mask 255.255.255.0 and Default Gateway 192.168.0.1.

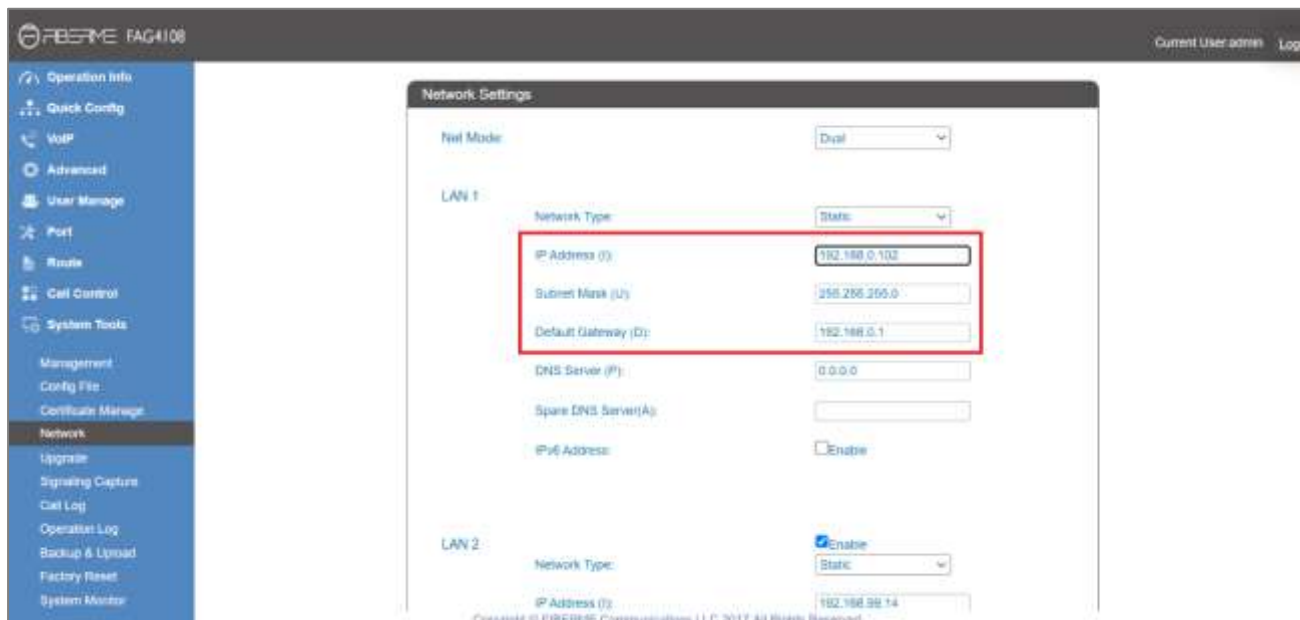


Figure 5: FAG4108 network setting



Scroll down and click save.

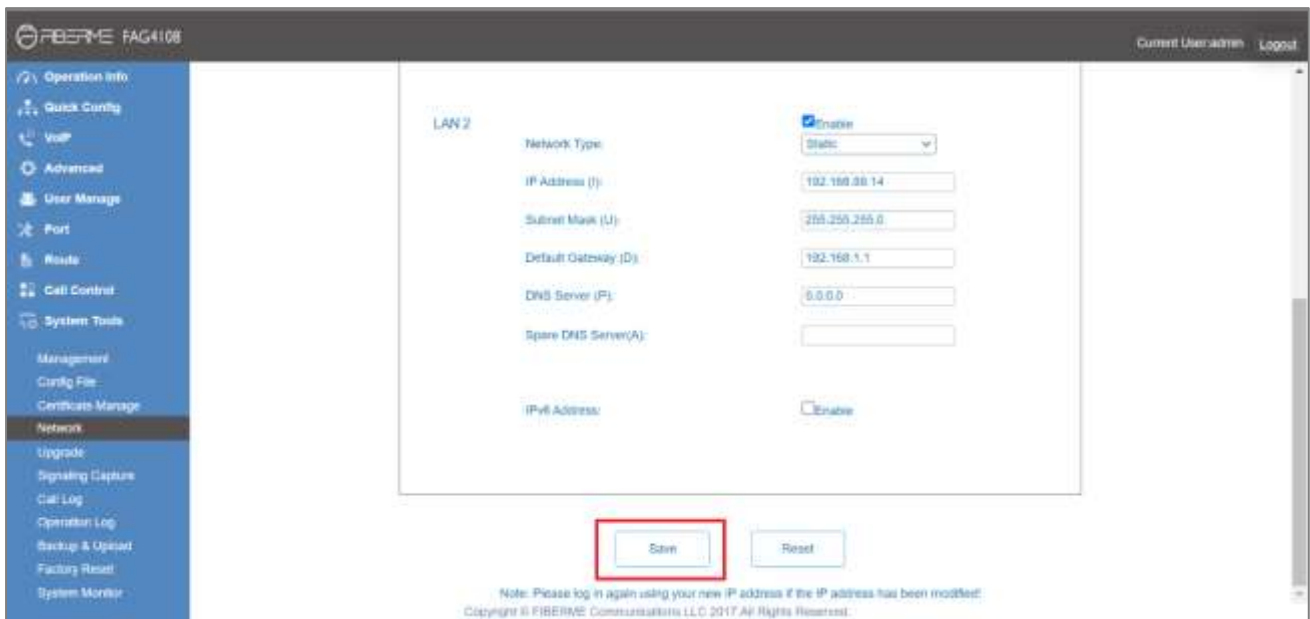


Figure 6: FAG4108 network setting

Login again with the new IP address which is 192.168.0.102, and make sure your PC network and the devices is the same range.

Connect both devices to switch, make sure that your PC is connected also to that switch. Follow this guide to continue the configuration between FCM5404 and FAG4108.



CONNECT FCM5404 TO FAG4108 USING PEER SIP TRUNK

Configure Peer SIP Trunk on FCM5404 with FAG4108

First, enter IP address of FCM5404 into your browser which is 192.168.0.101 to open web GUI, login with username and password both are admin.



Figure 7: Login into FCM5404.

On FCM5404 web GUI, to create a peer SIP trunk, go to “**Extensions/Trunks → Trunks**” then click “**Add**” to configure a new trunk.

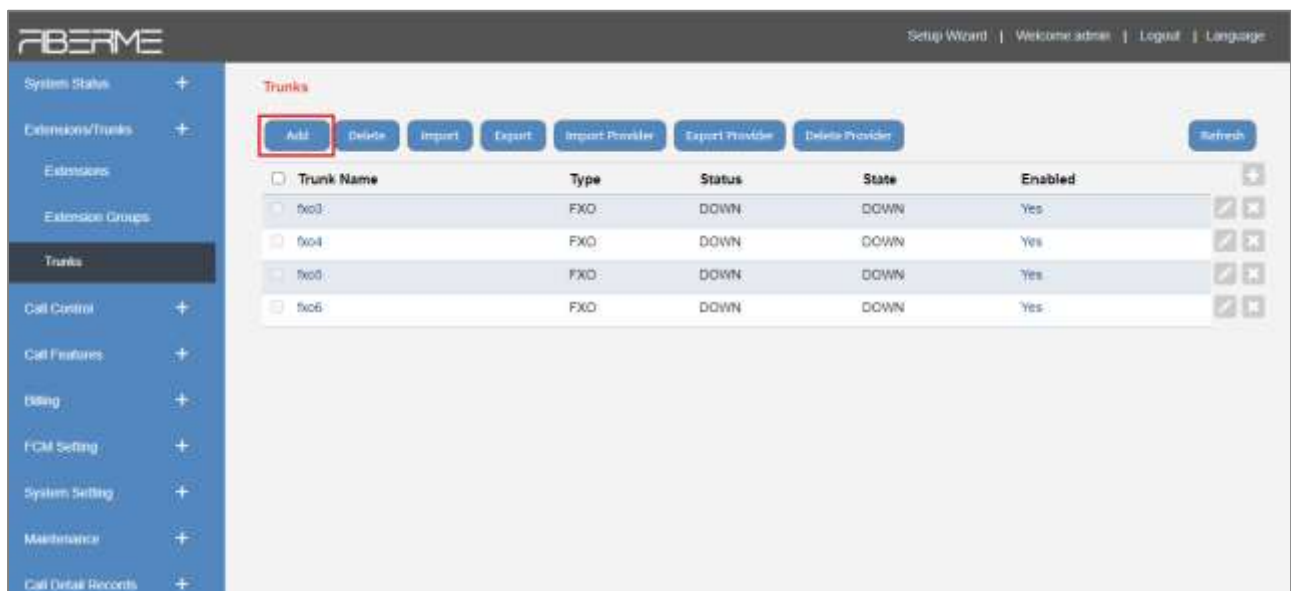


Figure 8: SIP Trunk on FCM5404



To establish a peer SIP trunk between FCM5404 and FAG4108, First make sure that the type of the trunk is **“SIP”** and enter a name for the trunk (e.g., **“FAG4108”**), please make sure that **“Register”** field set it to **“NO”**, “the default is **“NO”**”, Then on the **“Trunk IP/Domain”** field enter the IP address of FAG4108 which in this scenario is 192.168.0.102. Then click **“Save”**.

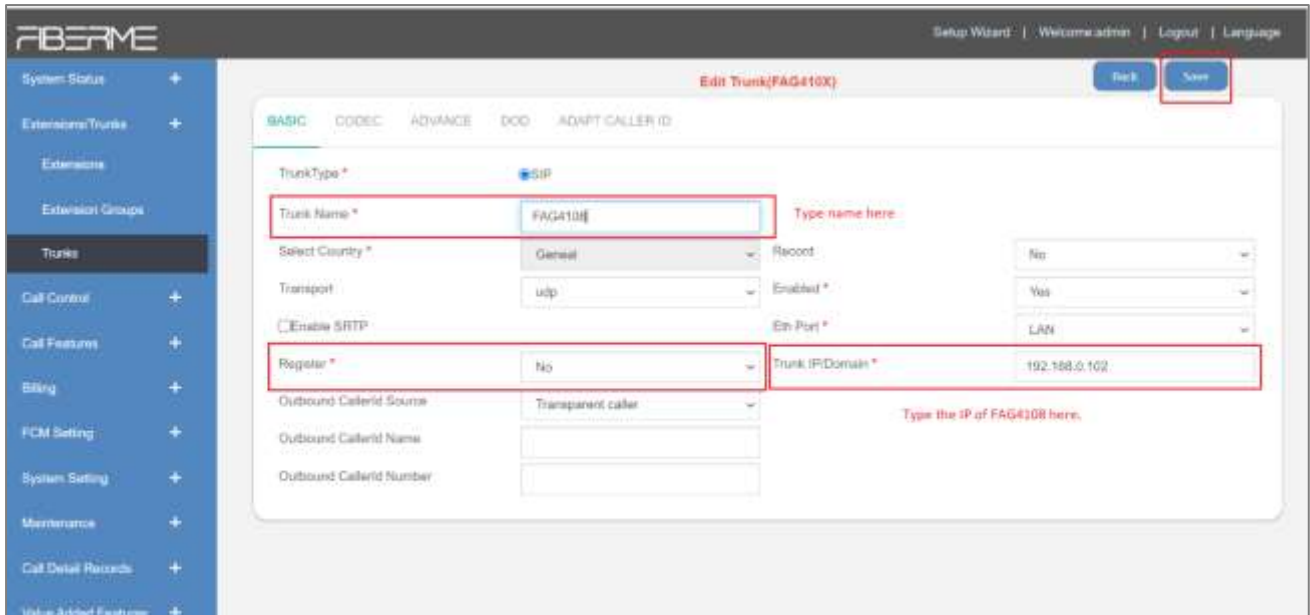


Figure 9: Configure Peer SIP Trunk on FCM5404

The next figure shows that trunk is configured.

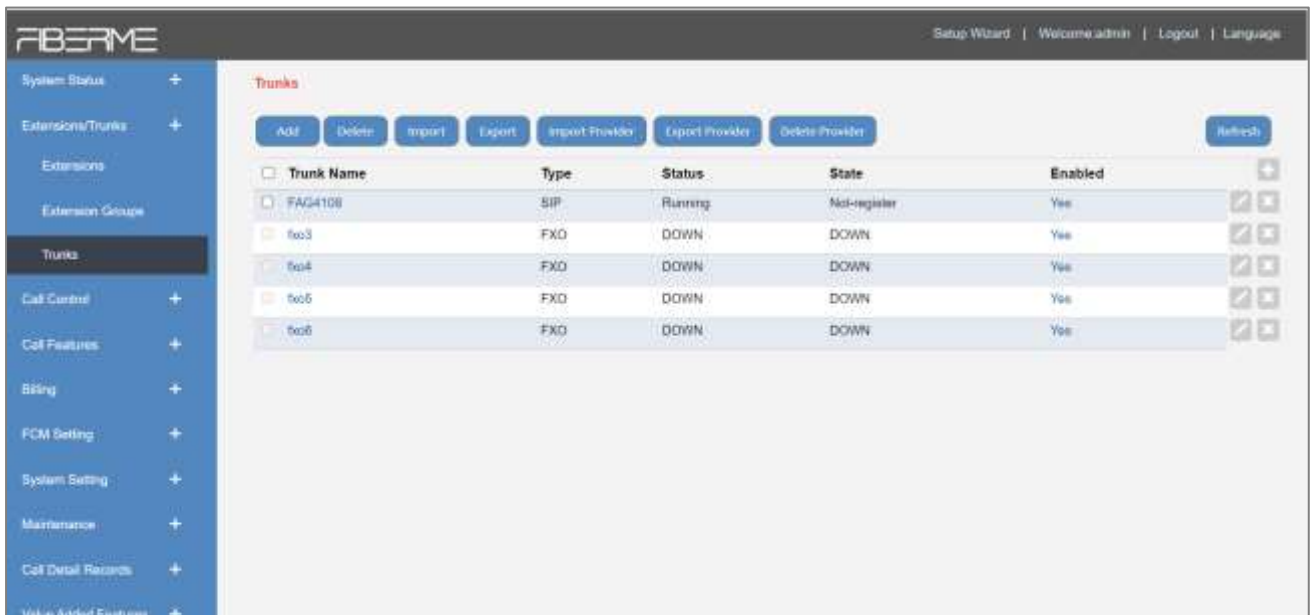


Figure 10: Peer SIP Trunk on FCM5404



Configure Peer SIP Trunk on FAG4108

On FAG4108 web GUI, Enter the IP which is configured 192.168.0.102 in your browser, Login to FAG4108 with username and password which both are admin.

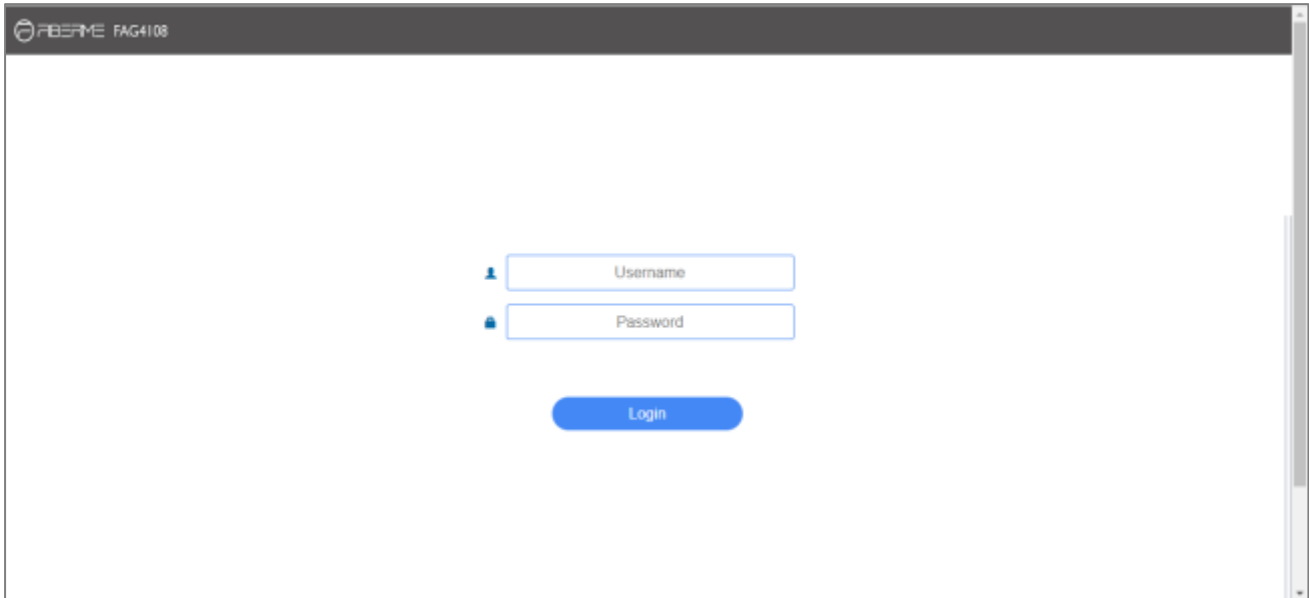


Figure 11: Login to FAG4108

SIP Trunk for FAG4108 with FCM5404

Go to **“VOIP → SIP”**, The IP address of FCM5404 in this scenario is 192.168.0.101, Enter the IP address of the FCM5404 needed to configure a peer SIP trunk with in FAG4108 in **“Registrar IP Address”** field, and in **“Registrar Port”** field enter **“5080”**, then click **“Save”**.

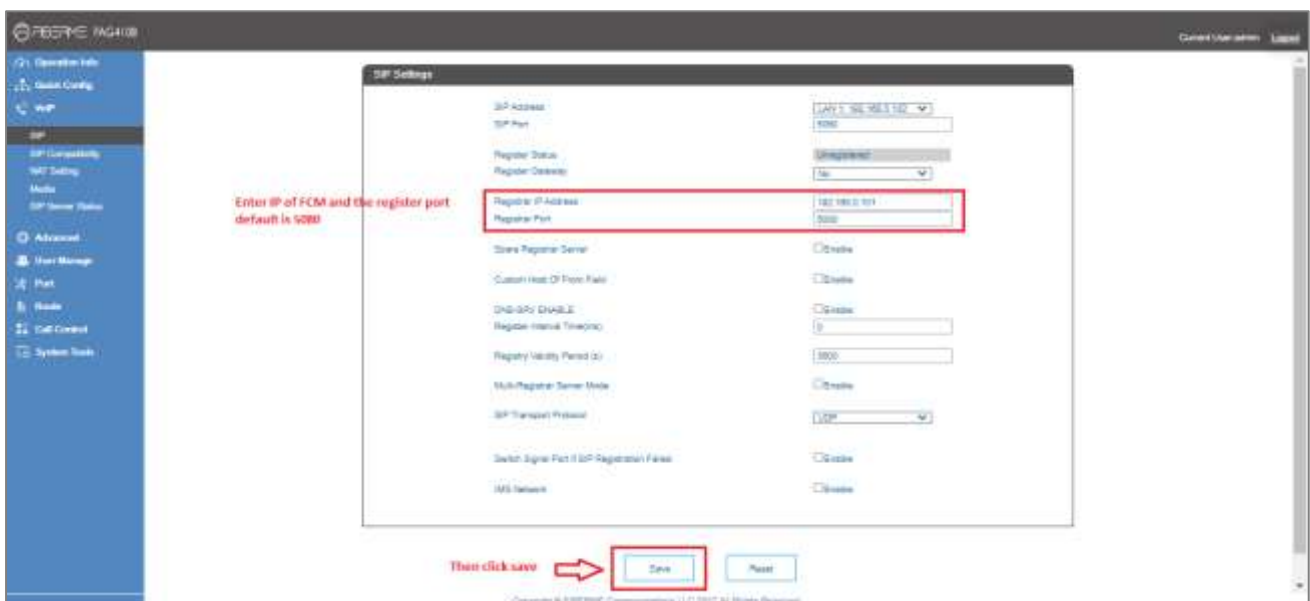


Figure 12: Peer SIP Trunk on FAG4108



CALL ROUTING ON FAG4108

Configure FXO Ports on FAG4108

First, FXO ports need to be configured as following.

- 1.Connect PTSN lines to FAG4108 ports.
- 2.On FAG4108 web GUI, go to “Port → FXO” and then click “Modify” on FXO port connected to edit.

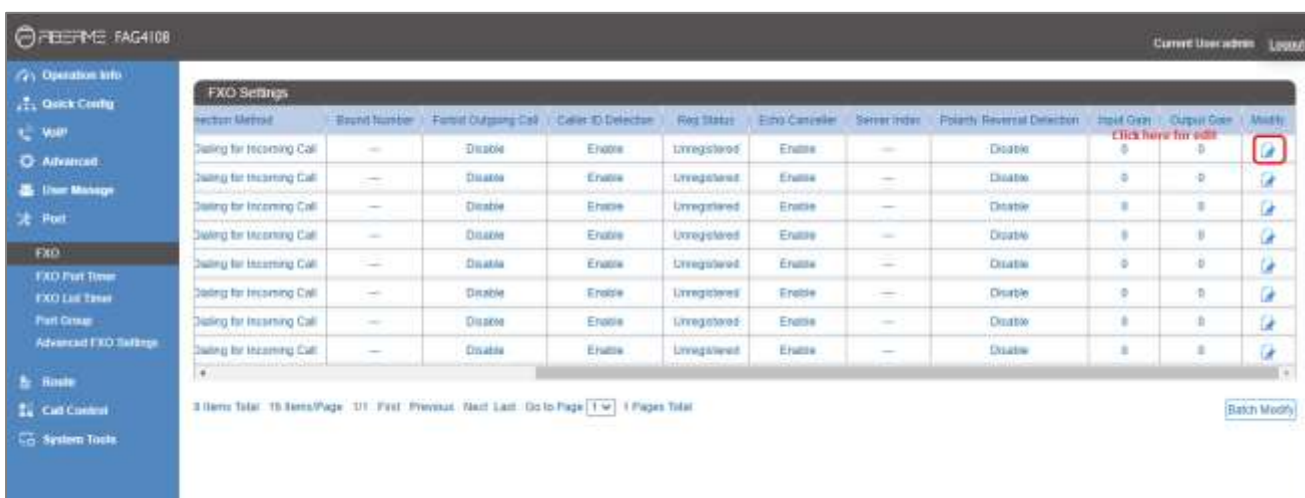


Figure 13: Configure FXO Port on FAG4108

3. Select “Connection Method” field to be “Static Binding” and then Set DID number in “Bound Number” field which will be forwarded to SIP server, DID number in this scenario is 12345, Click “Modify” to apply changes.

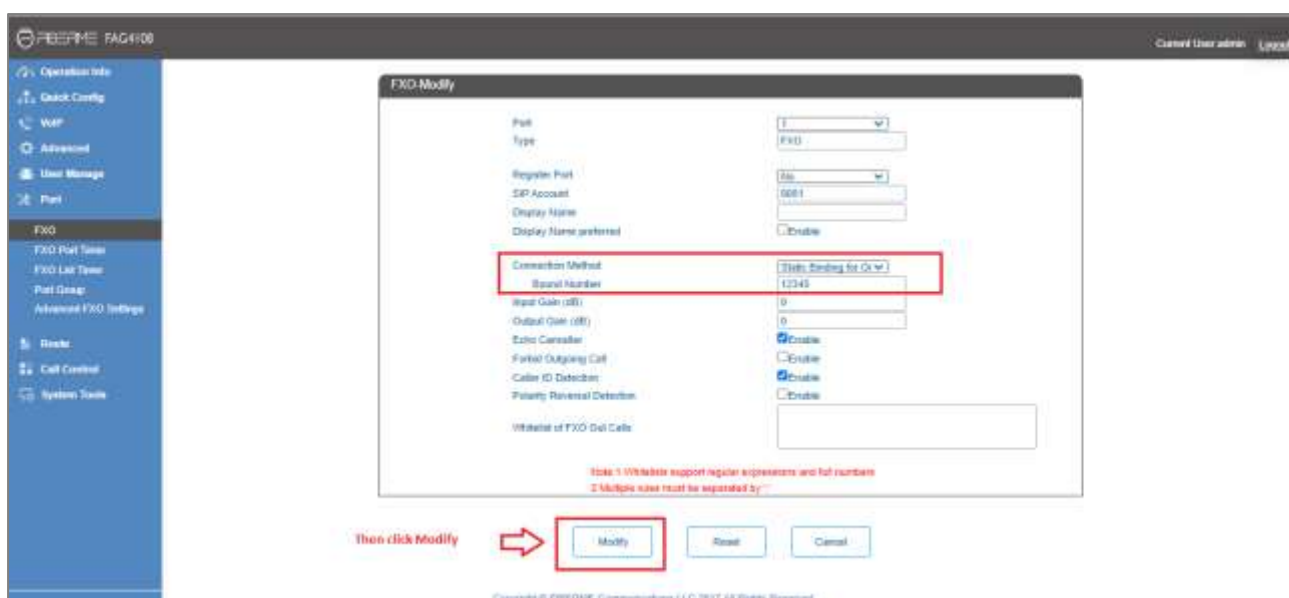


Figure 14: Set DID number for FXO port



Configure the remaining channels with the same DID and make sure that the FXO configuration will be like that, in case to set a single destination for all FXO channels.

Port	Type	SIP Account	Display Name	Connection Method	Board Number	Forward Outgoing Call	Caller ID Detection	Reg Status	Echo Cancel	Priority Reverse
1	FXO	6001	---	Static Binding for Outgoing/Incoming Call	12345	Disable	Enable	Unregistered	Enable	Disable
2	FXO	6002	---	Static Binding for Outgoing/Incoming Call	12345	Disable	Enable	Unregistered	Enable	Disable
3	FXO	6003	---	Static Binding for Outgoing/Incoming Call	12345	Disable	Enable	Unregistered	Enable	Disable
4	FXO	6004	---	Static Binding for Outgoing/Incoming Call	12345	Disable	Enable	Unregistered	Enable	Disable
5	FXO	6005	---	Static Binding for Outgoing/Incoming Call	12345	Disable	Enable	Unregistered	Enable	Disable
6	FXO	6006	---	Static Binding for Outgoing/Incoming Call	12345	Disable	Enable	Unregistered	Enable	Disable
7	FXO	6007	---	Static Binding for Outgoing/Incoming Call	12345	Disable	Enable	Unregistered	Enable	Disable
8	FXO	6008	---	Static Binding for Outgoing/Incoming Call	12345	Disable	Enable	Unregistered	Enable	Disable

Figure 15: Set DID number for FAG4108

Configure Port Group on FAG4108

On FAG4108 web GUI, go to “Port → Port Group” then click to “Add New”.



Figure 16: Create Port Group on FAG4108



Select the FXO ports for that group then click **“Save”**.

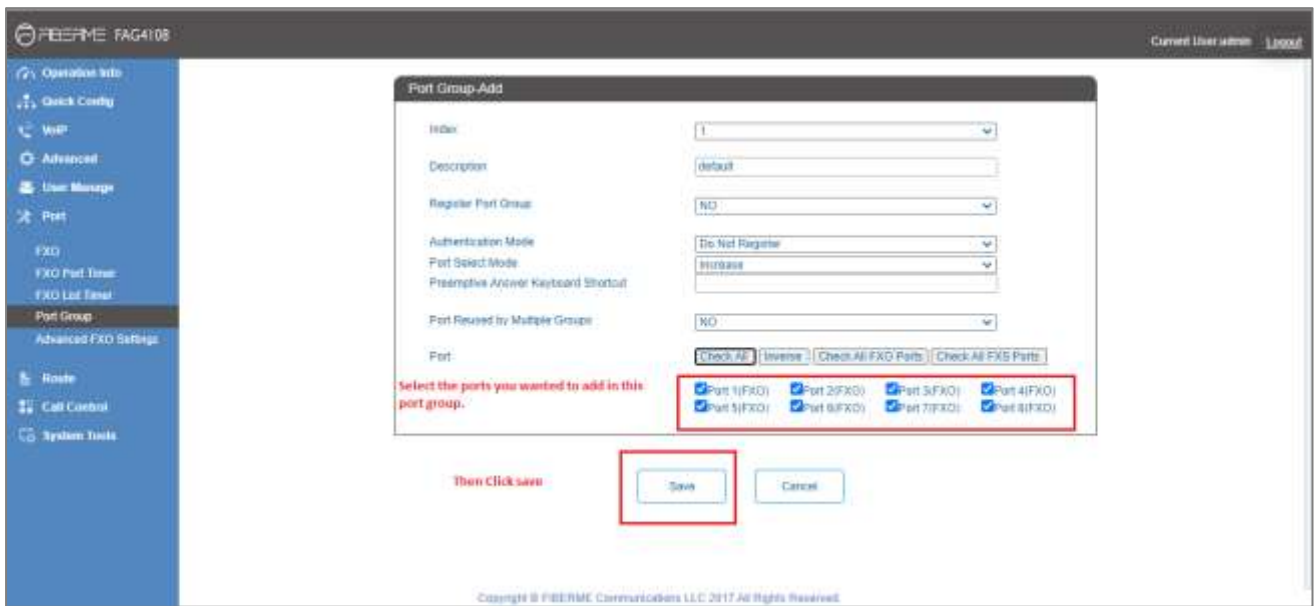


Figure 17: Select ports for Port Group

“Port Group” is created and its index is **“1”**.



Figure 18: Port group.



Configure IP to TEL routing on FAG4108

First, we need to understand the meaning of “IP → TEL” routing, it means the routing of calls that comes from the SIP server to PTSN lines connected to FAG4108, “SIP server here is the peer SIP trunk with FCM5404”.

On FAG4108 web GUI, go to “Route → IP->TEL” and click “Add New”.

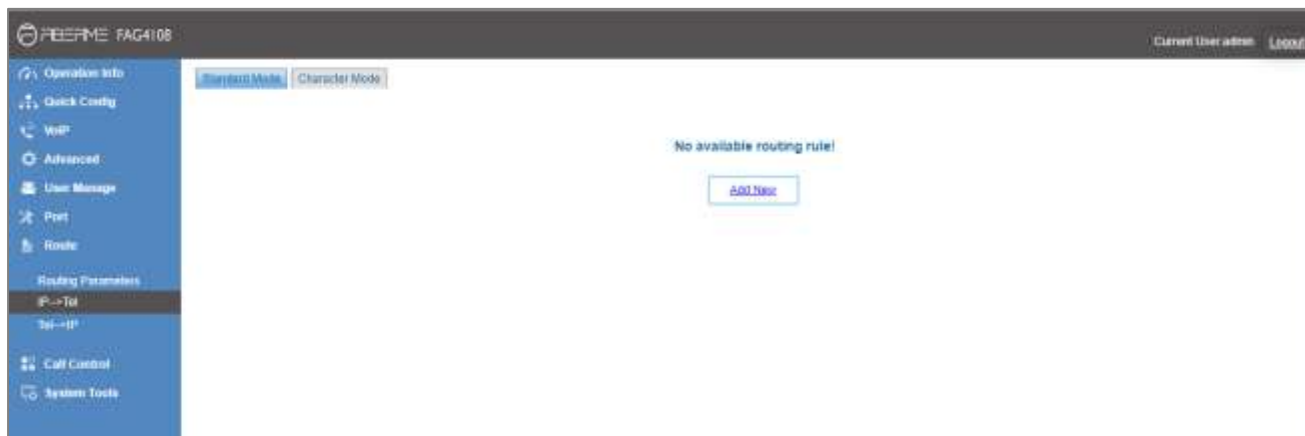


Figure 19: Adding new IP->TEL Route

Enter the IP Address of FCM5404 in “Source IP” which is 192.168.0.101, and select “Call Destination” to be the “Port Group” created which its index is “1”.



Figure 20: Configure IP->TEL Route



Now you can see a new route is configured.



Configure TEL to IP routing on FAG4108

First, we need to understand the meaning of “TEL → IP” routing, it means the routing of calls that comes from PTSN lines connected to FAG4108 and direct it to SIP server “which is peer SIP trunk with FCM5404”.

On FAG4108 web GUI, go to “Route → TEL->IP” and then click on “Add New”.

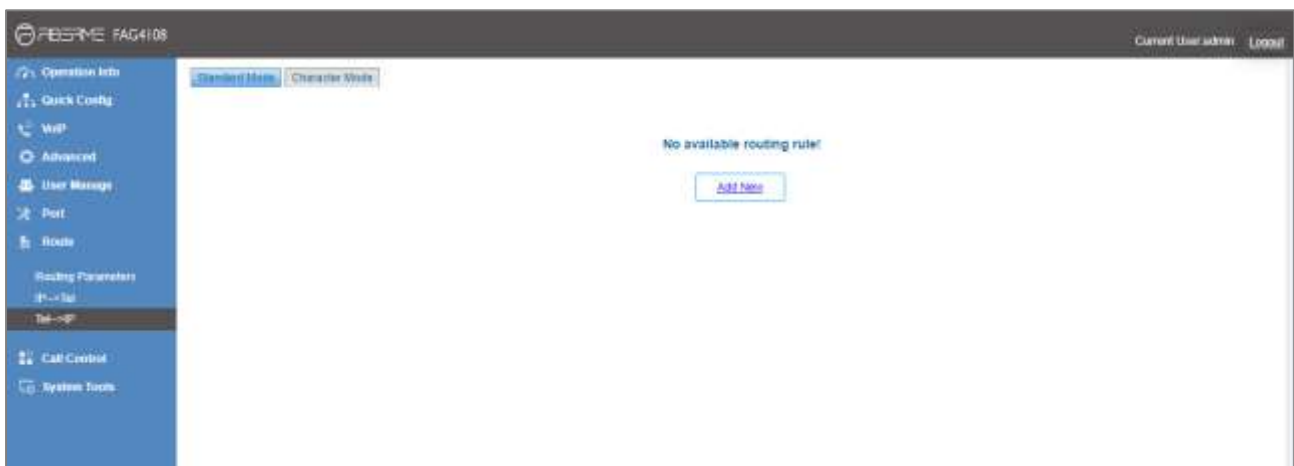


Figure 21: Adding new TEL->IP Route

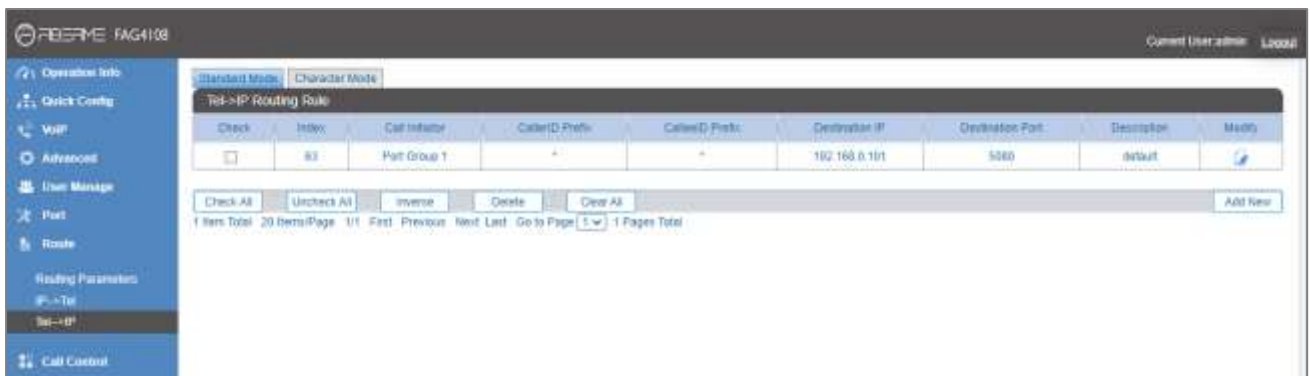


Select the source to be the “Port Group” created above which its index is “1” and enter the IP Address of FCM5404 in the “Destination Address” which is 192.168.0.101 and “Destination Port” is “5080”.



Figure 22: Configure TEL->IP Route

A new route is configured.



CALL ROUTING ON FCM5404

Configure outbound routes on FCM5404

To set an outbound route you need to determine some parameters:

1. Name.
2. Dial pattern.
3. Extensions that can use that route.
4. Trunks used by that route.

To complete configure that route and understand these parameters follow the instructions below.

On FCM5404 web GUI, go to **“Call Control → Outbound Routes”** to create a new route this will allow extension on FCM5404 to reach the PSTN number throw peer SIP trunk created with FAG4108 that has been configured before.

First delete the default route on **“Call Control → Outbound Routes”** page.

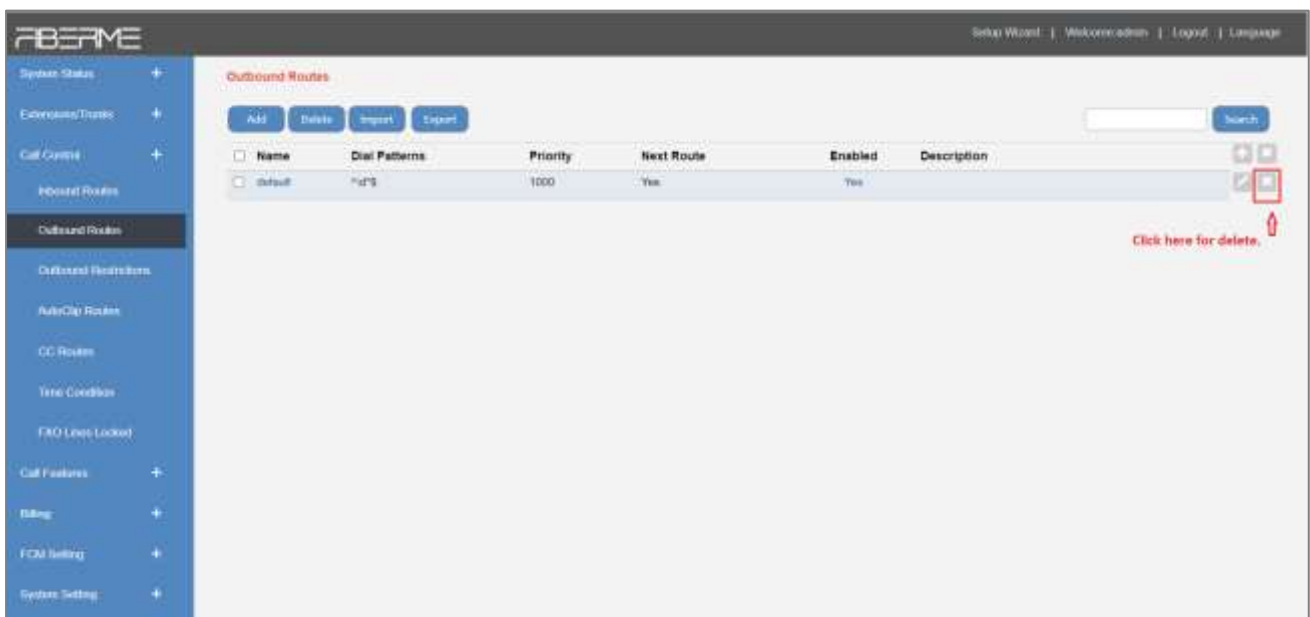


Figure 23: New Outbound Routes.



Click on “Add” to set new route.



Figure 24: New Outbound Routes.

A next page will open where you will fill parameters required in that route.

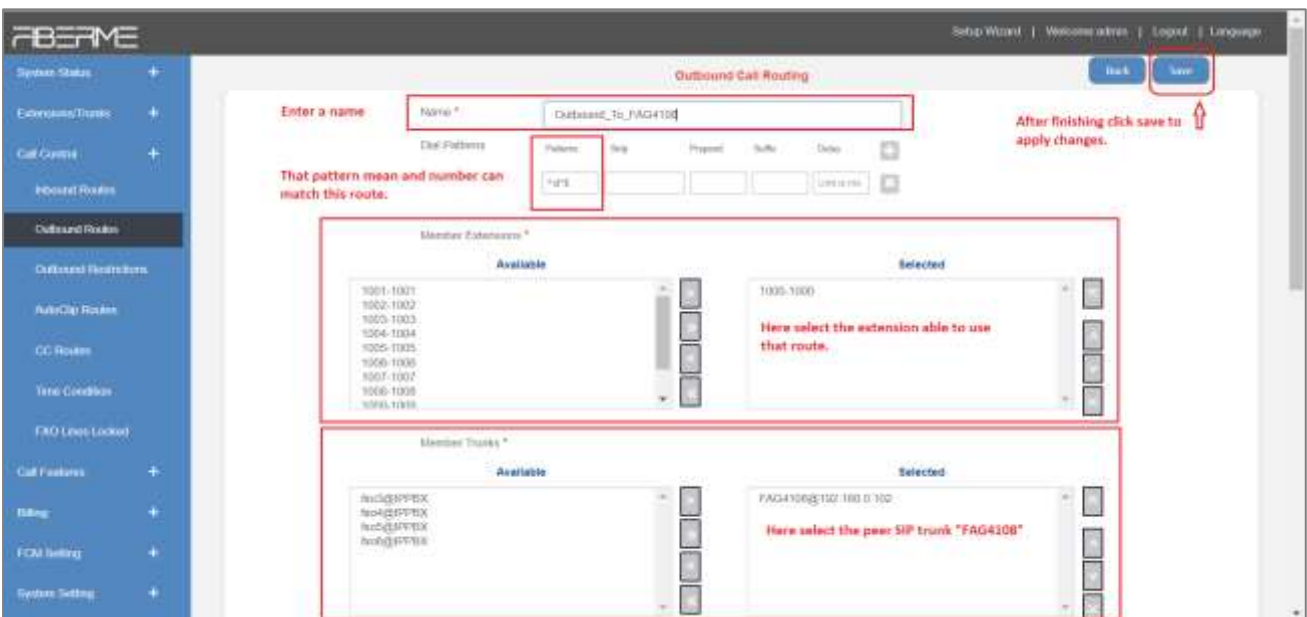


Figure 25: Outbound Routes on FCM5404

Name: Any name for that outbound route to mark it.

Dial plan: Pattern “ $\wedge \backslash d * \$$ ” means any dialed number can use to that rule. For more details about “Dial plan” click [here](#).

Member Extensions: Extensions allowed to use that route.

Member Trunks: Trunks that will be used for that route, in our scenario it will be Peer SIP trunk as shown in the figure above.



A new route is configured.

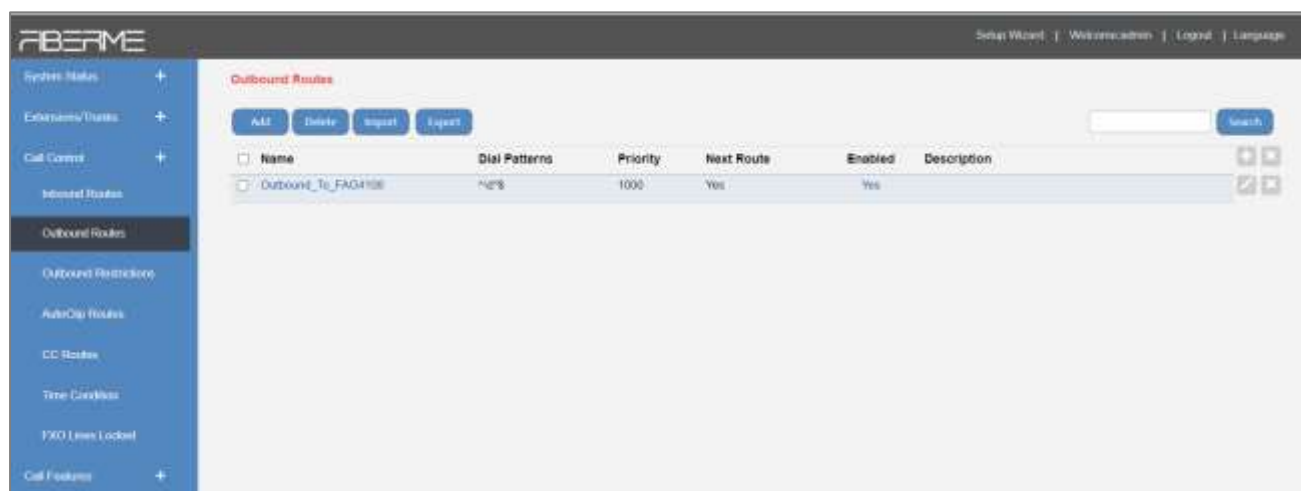


Figure 26: Outbound Routes on FCM5404

Configure Inbound Routes on FCM5404

To set an inbound route you need to determine some credentials:

1. Name
2. DID pattern
3. Destination
4. Member Trunks

So, for complete set that route and understand these parameters please follow the instructions below.

On the FCM5404 web GUI, go to **“Call Control → Inbound Routes”** then add a new route. In this example we use 12345 as DID number which is used on FAG4108 as forwarding number, which has been entered in **“Bound Number”** field in FXO parameter on FAG4108.



First, Delete the default route

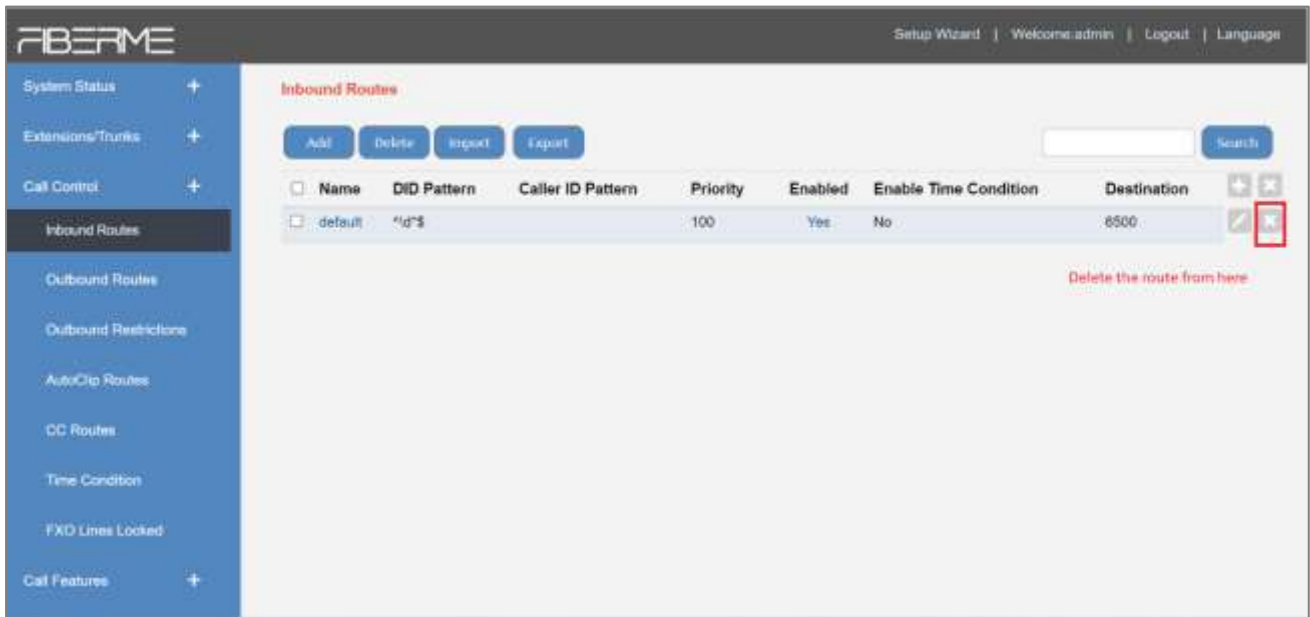


Figure 27: Inbound Routes on FCM5404

Click on “Add” to configure a new route.

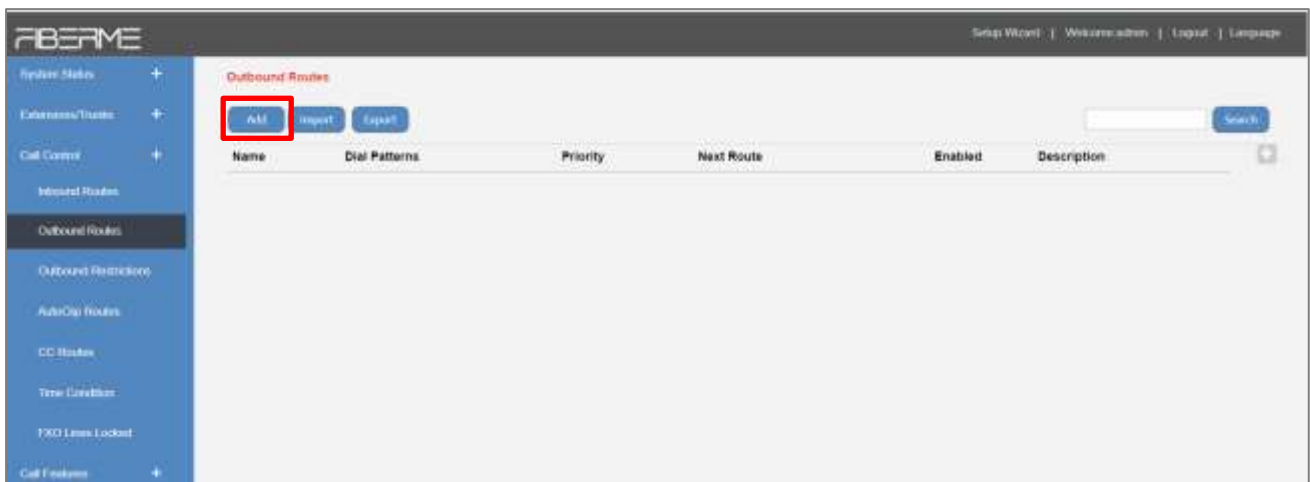


Figure 28: Inbound Routes on FCM5404



Then you will be directed to a widow to configure inbound route parameters as following.

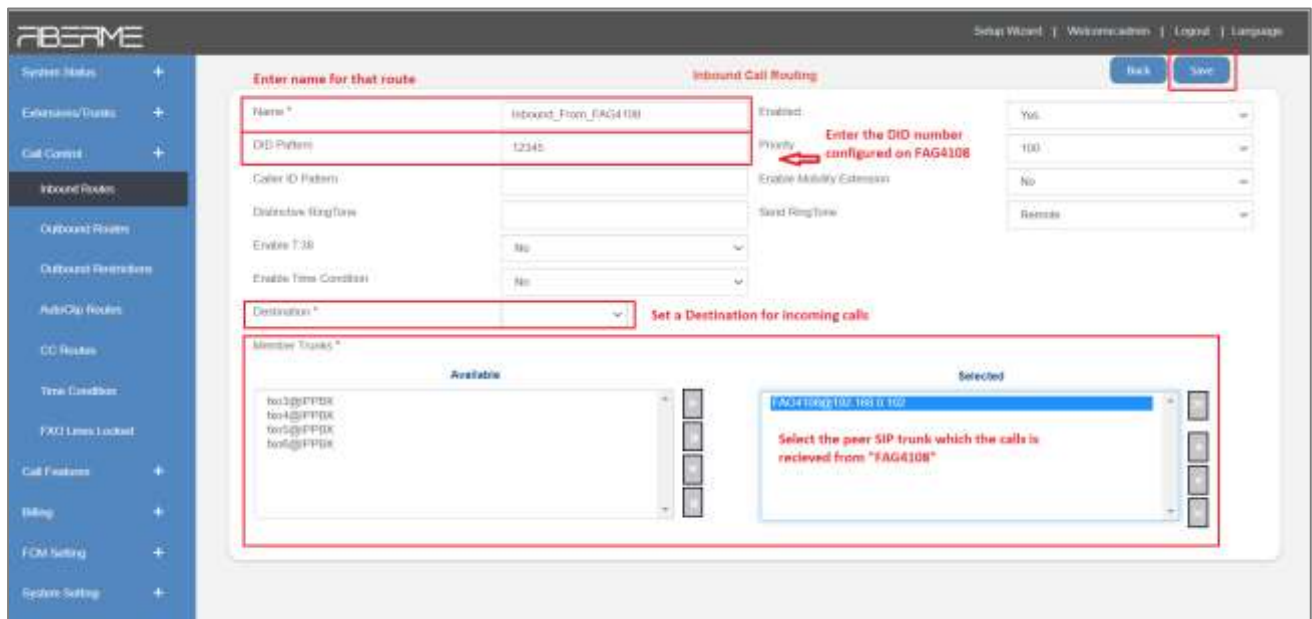


Figure 29: Inbound Routes on FCM5404

- **DID pattern:** DID number forwarded from FAG4108 to SIP Peer Trunk that has been configured before.
- **Name:** Set any name to mark that rule for example: “Inbound_From_FAG4108”.
- **Destination:** The Destination where the incoming calls will be directed to, there is more than option that you can direct the calls to as following.

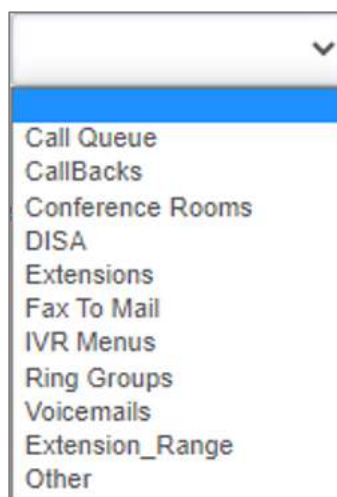
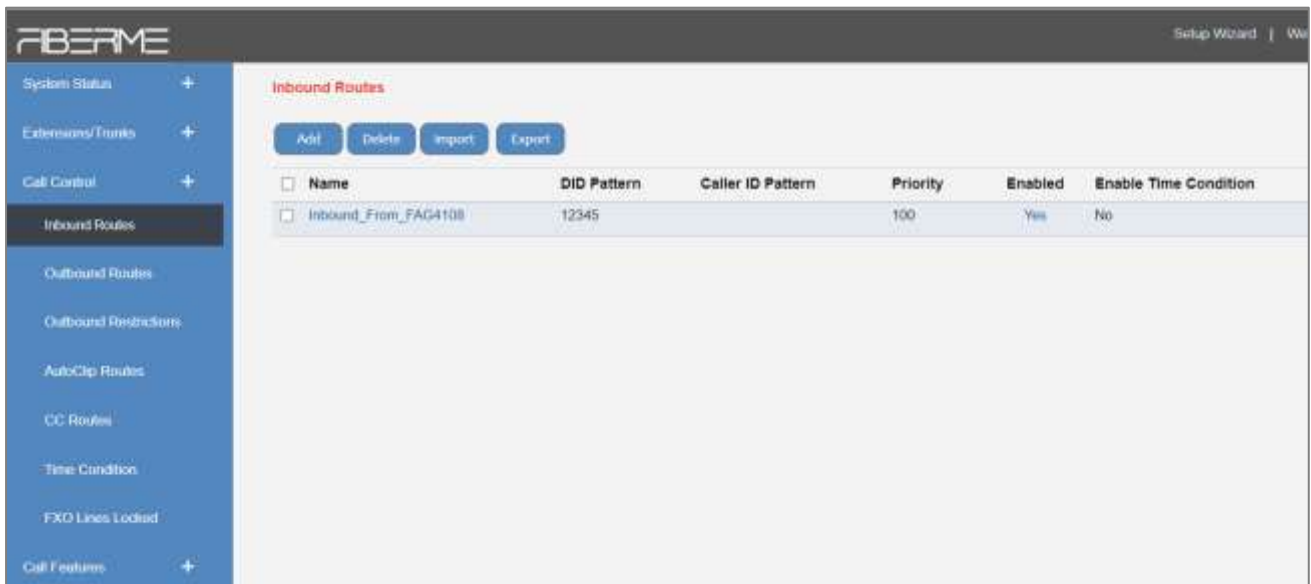


Figure 30: Destination of Inbound Routes.

- **Member Trunks:** Select the trunk source of this route which in this case will be the SIP Peer Trunk configured.



A new route is configured.



This scenario now has ended, peer SIP trunk accomplished between FCM5404 and FAG4108 and this scenario is applicable for FAG4104 as well.





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