Grandstream Networks, Inc.

Peering GXW42XX FXS Gateway with HT8x1 FXO Gateways

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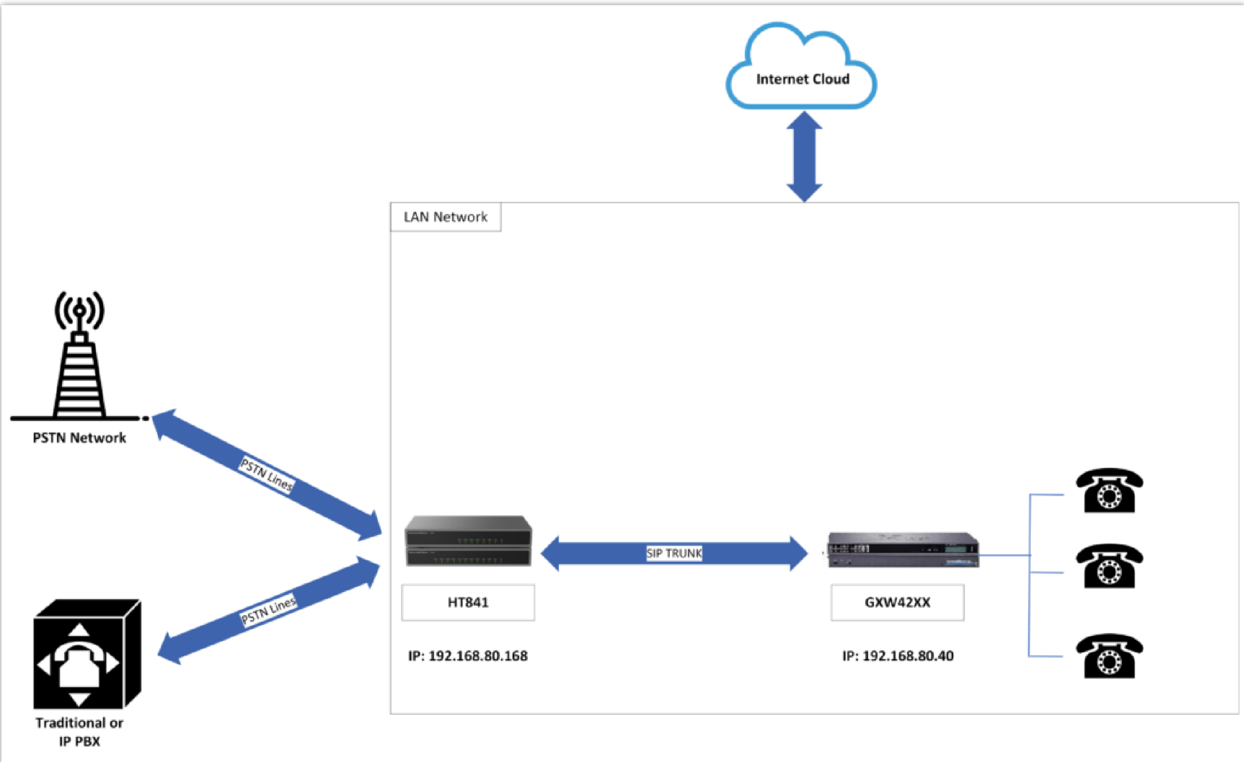
Introduction

A common scenario which involves a GXW42xx (FXS gateway) connected to an HT841/HT881 (FXO gateway) but doesn't involve any SIP server. This scenario is useful when we want to deploy analog phones in our LAN with different PSTN lines connected to our FXO gateway. without the need to deploy a SIP Server.

The illustration below demonstrates the set up we want to achieve:



GXW42xx & HT8x1 connection

Note

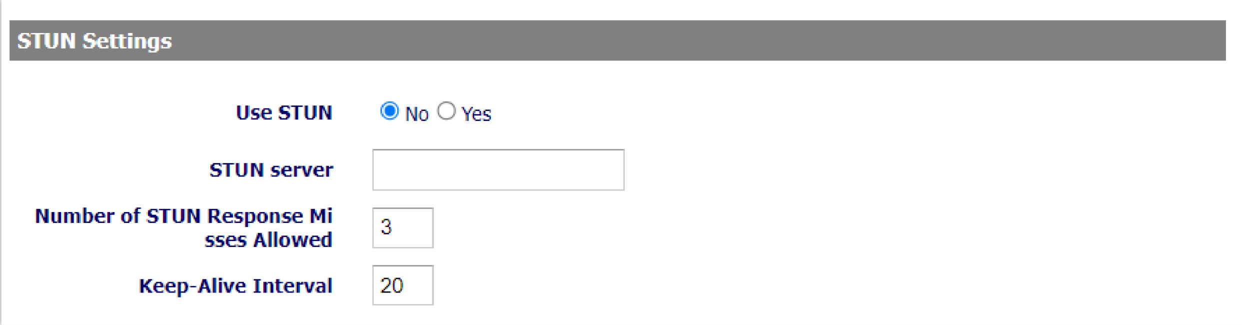
Please note in order for this setup to work, it is important that both the FXO gateway HT841/HT881 and the FXS Gateway GXW42xx are located on the same LAN OR have Public Static IPs. In short, both devices should be able to locate each other.

CONFIGURATION OF THE GXW42XX & MULTIPLE HT841/HT881 SCENARIO

GXW42XX CONFIGURATION

Maintenance – Network Settings

• STUN Server – Blank

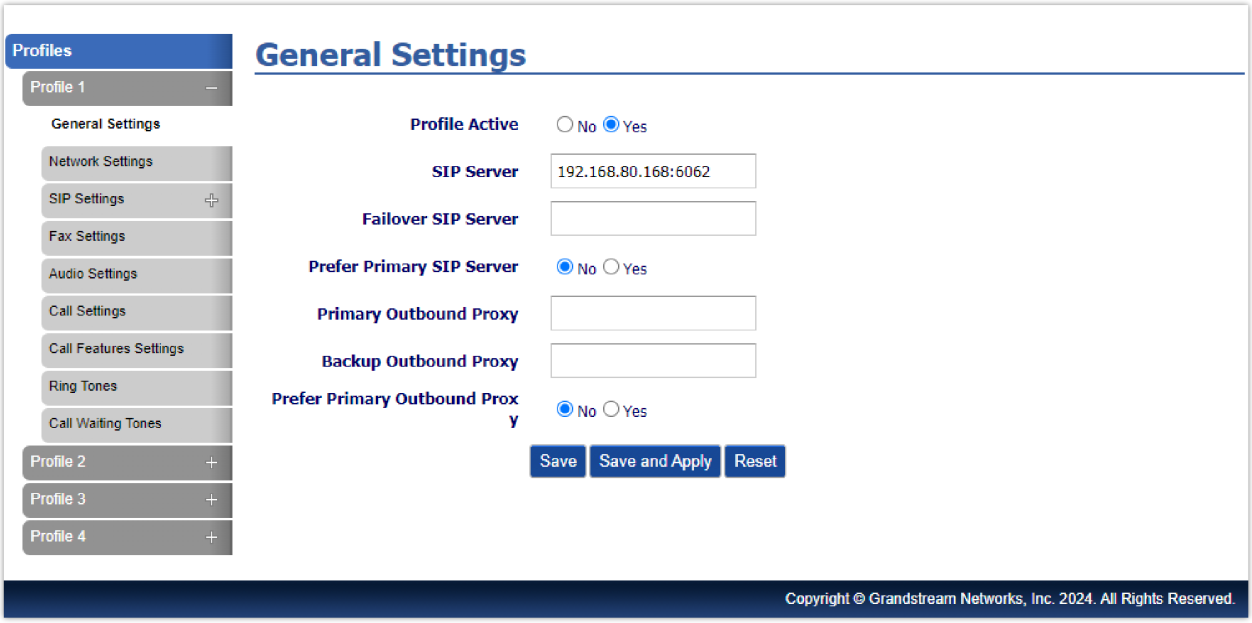


STUN Settings

Profiles – Profile 1

General Settings:

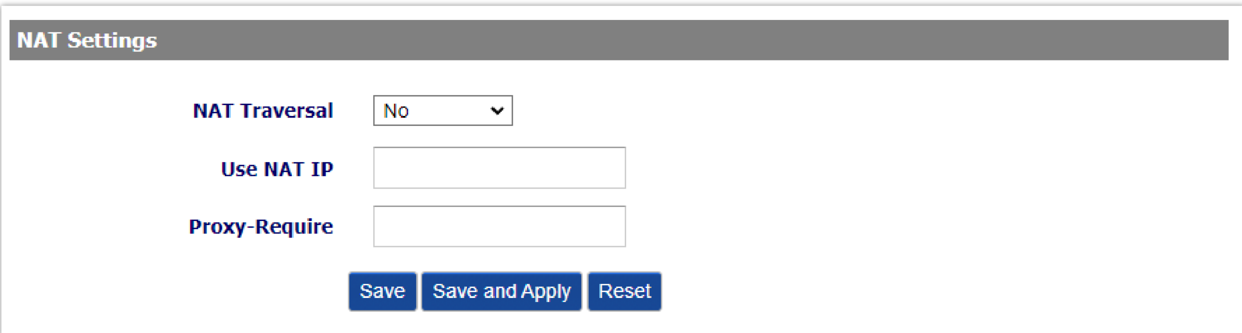
• SIP server – Set to IP address of HT8x1, followed by the default listening listening port for FXO port defined on the HT8x1, we will enter the value 192.168.80.168:6062



SIP Server set up for HT841

Network Settings:

• NAT traversal – No



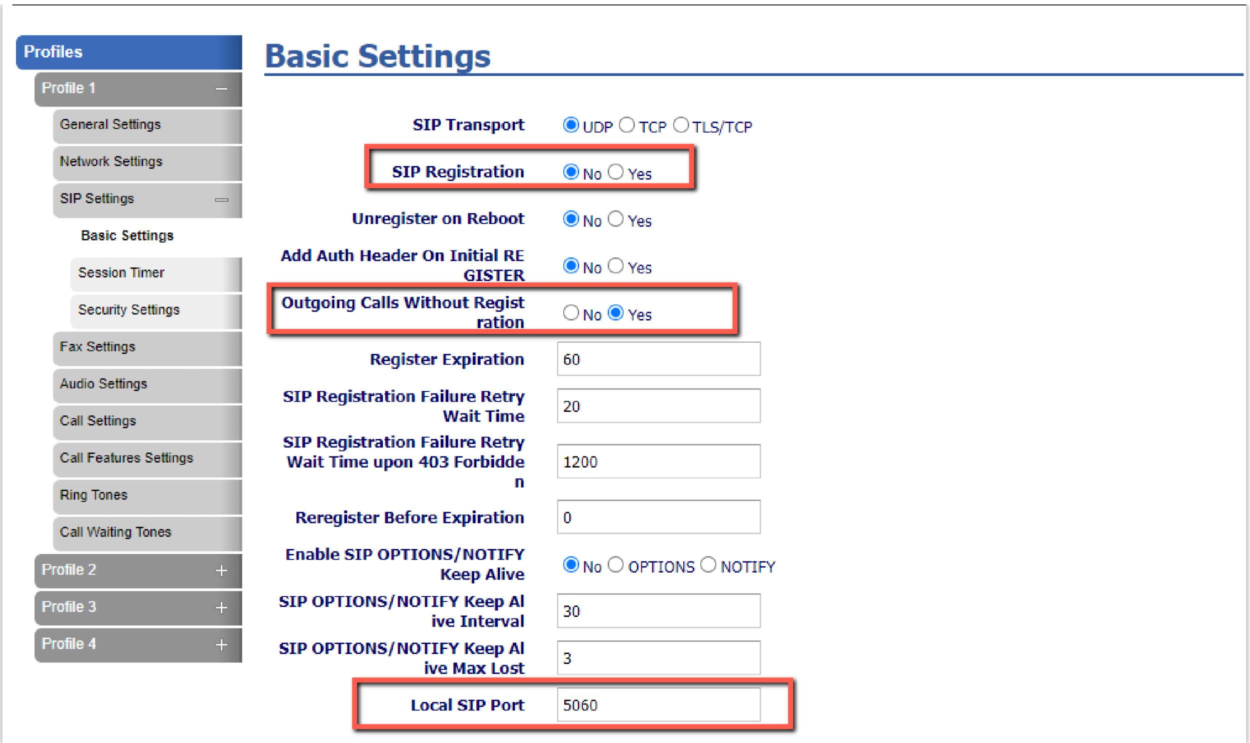
NAT Traversal settings

SIP Settings → Basic Settings:

• SIP registration – No

• Outgoing Call without Registration – No

• Local SIP Port – 5060



SIP Registration Settings

Note

- If there's a need to set up multiple HT8x1 FXO gateways due to a shortage of FXO ports or any similar configuration requirement, the same setup procedure should be applied to the second HT8x1 device. This involves configuring the SIP trunk with the second HT8x1 FXO gateway, specifically on profile 2 of the GXW42xx.
- GXW42xx can be peered with up to four HT8x1 FXO Gateways, since it supports four profiiles to be configured

FXS Ports

Port Settings:

• Port 1 → User ID: 5555 | Authenticate ID: 5555 | Name: 5555 | Profile : Profile 1

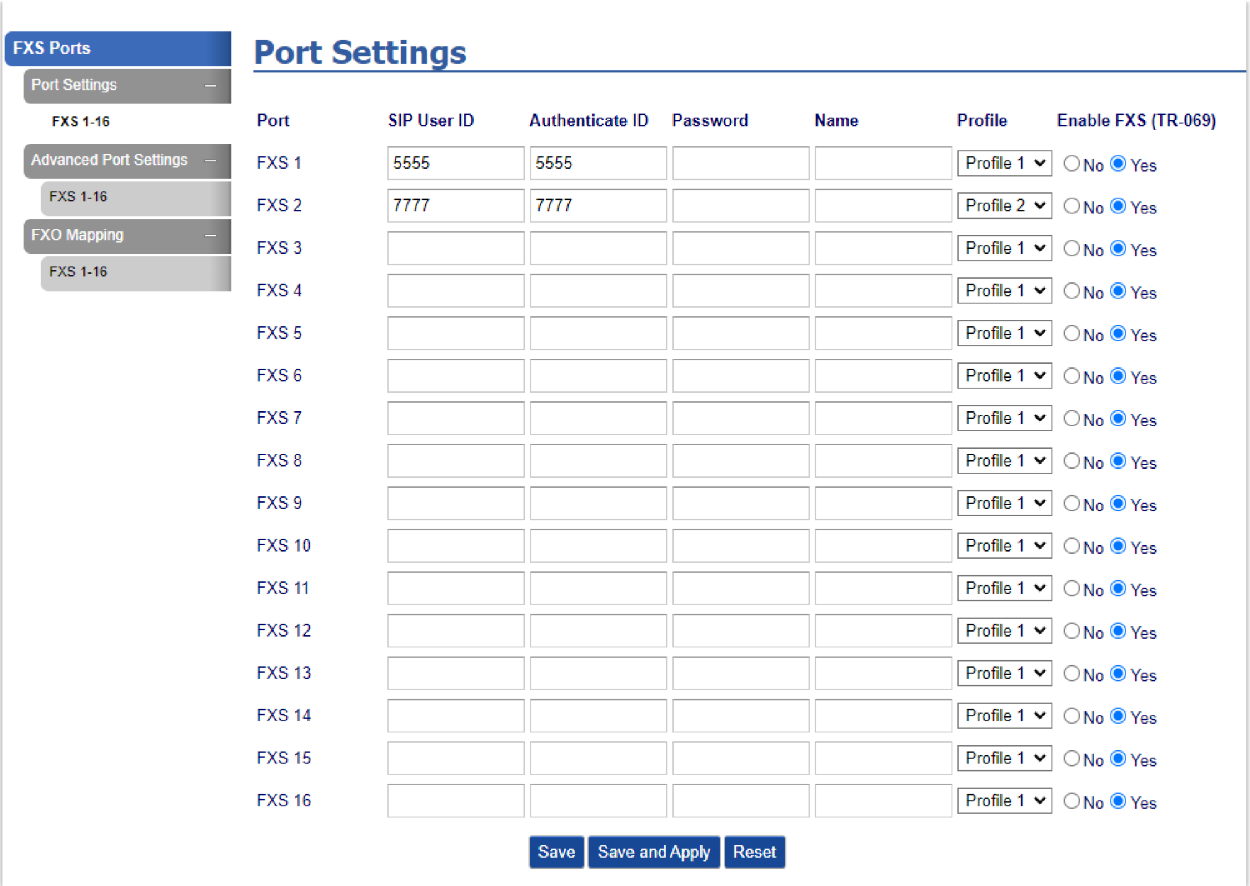
• Port 1 → Enable FXS – Yes

This enables the GXW42xx to direct calls between the analog phone linked to port 1 of the GXW42xx via the FXO gateway connected through Profile 1.

• Port 2 → User ID: 7777 | Authenticate ID: 7777 | Name: 7777 | Profile : Profile 2

• Port 2 → Enable FXS – Yes

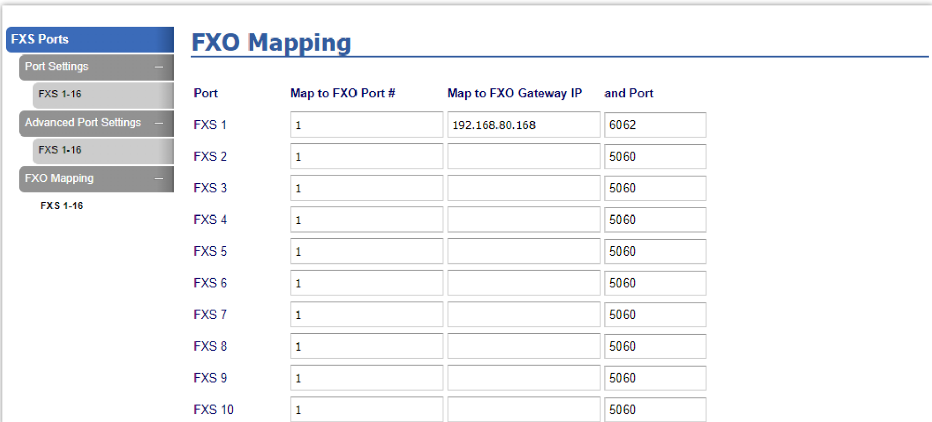
This enables the GXW42xx to direct calls between the analog phone linked to port 2 of the GXW42xx via the FXO gateway connected through Profile 2



FXO Mapping

In this part, you can map FXS1 with FXO1 of the HT8x1 to make sure the call is routed through the correct port, the following fields will be filled

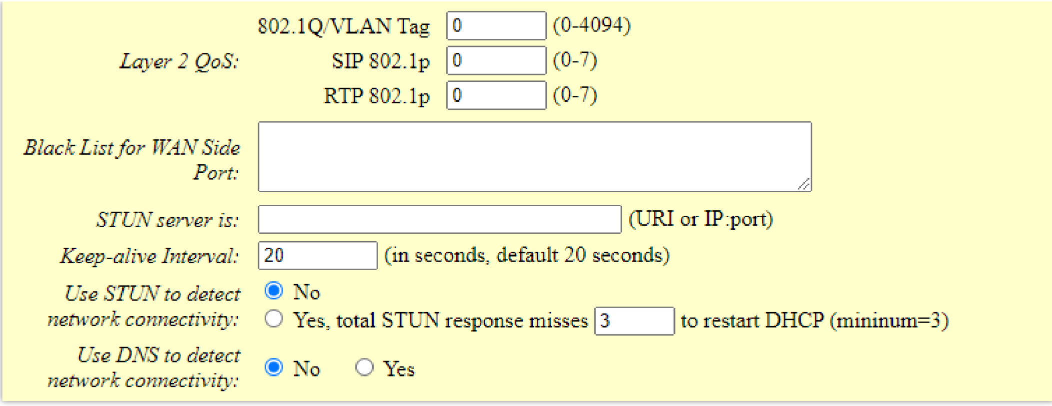
- **Map to FXO Port # → 1**: The FXO port 1 will be mapped to FXS 1
- **Map to FXO Gateway IP:** Selects the IP address of the FXO gateway
- **Port**: Selects the FXO port that will be used to route the call, it is going to be the FXO 1 Port



HT841/HT881 CONFIGURATION

HT8x1 – *Advanced Settings*

• STUN server – Blank



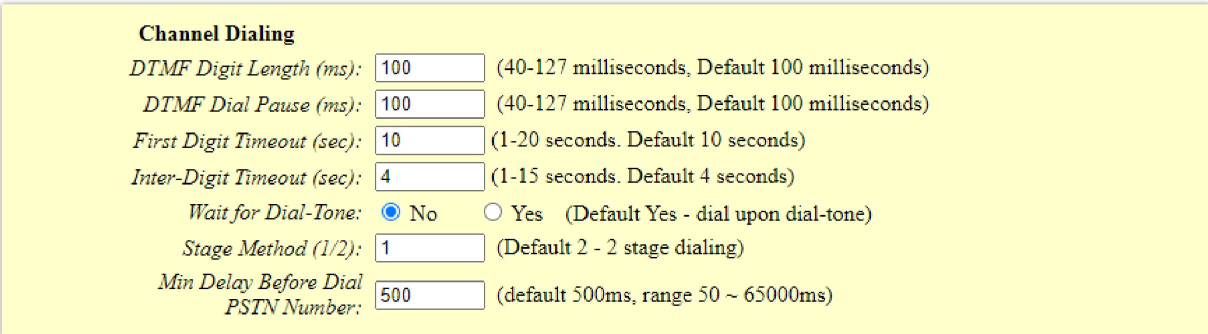
Stun Server

HT8x1 – *FXO Profile 1 – Chaneel Dialing*

Dialing to PSTN:

• Wait for dial tone – No

• Stage Method – Setting this parameter to 1 will direct the PSTN call from the VOIP endpoint.



Channel dialing settings

Note

- **Enabled (Wait for Dial Tone):** Gateway waits for a dial tone before dialing. Suitable for lines with dial tones; users dial after hearing it.
- **Disabled (No Wait for Dial Tone):** Gateway doesn't wait for a dial tone. Useful when no dial tone or automated dialing is needed.

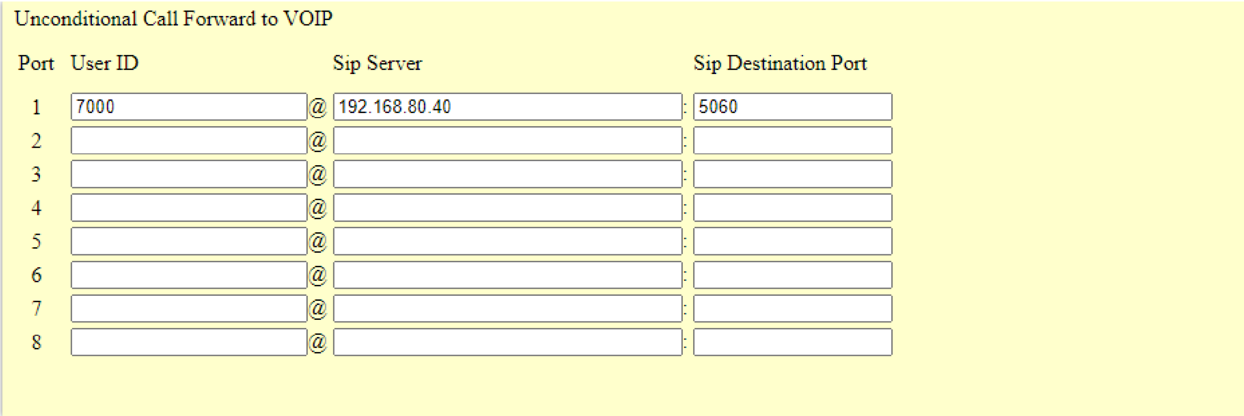
HT8x1 – *Ports – Unconditional Call Forward to VoIP*

Calling to VoIP:

• User ID: 7000

• Sip Server: 192.168.80.40 (IP Address of the FXS Gateway)

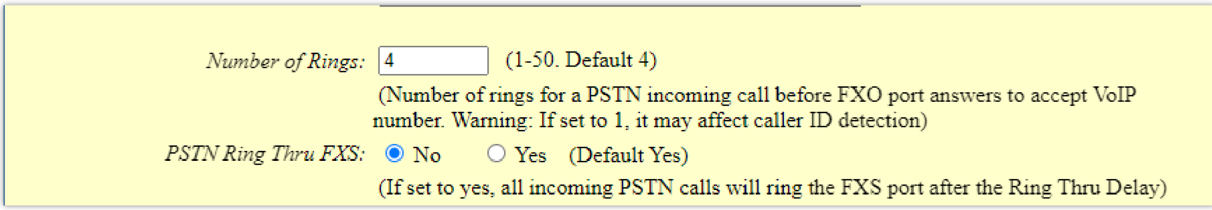
• Sip Destination Port: 5060



Unconditional Call Forward to VoIP settings

HT8x1 – *FXO Profile 1 – FXO Termination*

- Set the following:
  1. **Number of Rings →** 4
     This is the number of rings the gateway will wait to send the call to the VOIP side in case the Caller ID has yet to be detected.
  2. ***PSTN Ring Thru FXS*** **→** No
     Disable this option to prevent calls from being routed through the FXS port.



Number of Rings Settings

HT8x1 – *FXO Profile 1 –* SIP *Settings*

General Settings :

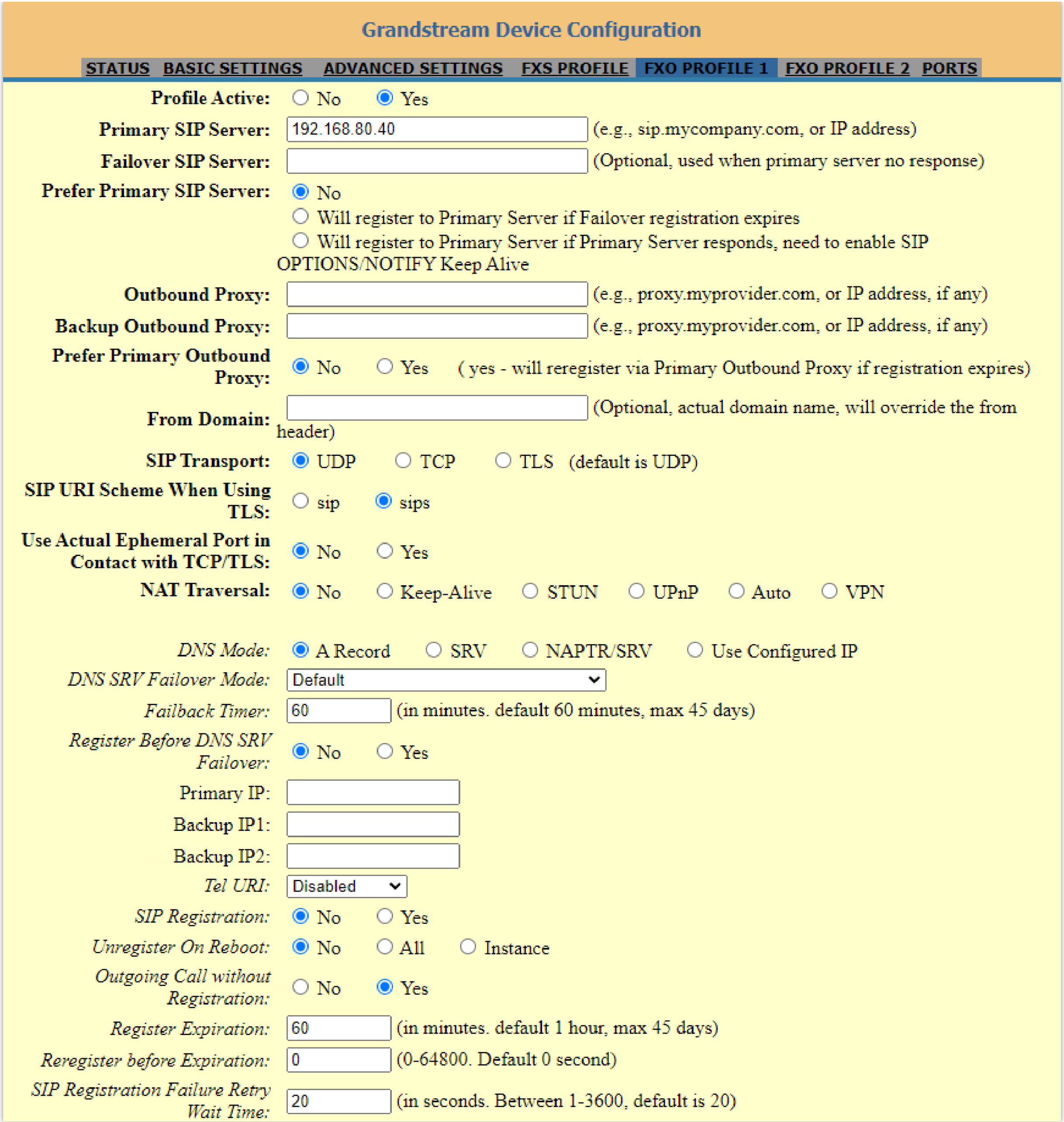
• SIP Server: Set it to IP address of GXW42xx

SIP Settings:

• SIP registration – No

Network Settings:

• NAT traversal – No



SIP settings

Results

After the configuration is complete between the GXW42xx FXS Gateway and HT841/HT881 FXO Gateways, users from inside the LAN can use their analog phones connected to the GXW42xx FXS gateways to reach outside PSTN lines, without the need to deploy any SIP server, it only requires to set up peer trunk between the GXW42xx FXS Gateway and the HT841/HT881 FXO Gateways.

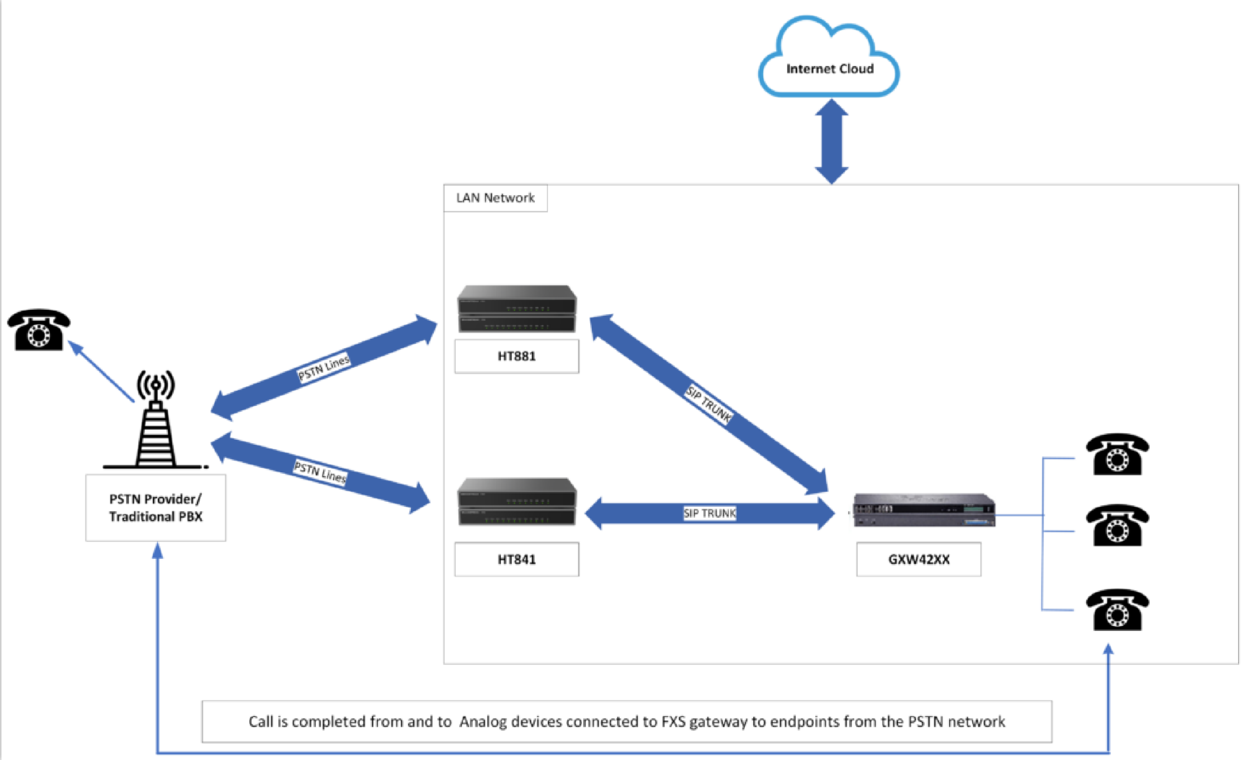


Diagram of the connection results

Supported Devices

Device	Firmware Required
HT841	1.0.1.2+
HT881	1.0.1.2+
GXW4216 v1	1.0.23.7+
GXW4224 v1	1.0.23.7+
GXW4232 v1	1.0.23.7+
GXW4248 v1	1.0.23.7+
GXW4216 v2	1.0.21.2+
GXW4224 v2	1.0.21.2+
GXW4232 v2	1.0.21.2+
GXW4248 v2	1.0.21.2+

Supported devices