How to Connect Trixbox to NeoGate TA FXS Gateway

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1. Introduction

This application note shows how to connect Trixbox to NeoGate TA FXS gateway. This guide has been tested with NeoGate TA3200 and Trixbox firmware version: 2.8.0.4.

Two modes are available for NeoGate TA to connect to Trixbox, we call them VoIP trunk mode and Service Provider SIP/IAX trunk mode (SPS/SPX).
*You can simply choose one mode to achieve the connection.

**Target:**
After connecting NeoGate TA3200 and Trixbox, FXS extensions will be extended on Trixbox. Once the FXS ports are connected to Trixbox, the phones connected to the FXS ports will be treated as Trixbox FXS extensions. The following features can be achieved:
1. Make calls between the analog phone and Trixbox SIP extension;
2. Receive incoming calls on the analog phones;
3. Make external calls from the analog phones using trunks on Trixbox.

**Description:**
IP address of Trixbox: 192.168.5.236
IP address of NeoGate TA3200: 192.168.5.13

![Diagram](image)

*Figure 1. Connect Trixbox and NeoGate TA3200*
2. Preparation

NeoGate TA3200 attempts to contact a DHCP server in your network to obtain valid network settings (e.g., the IP address, subnet mask, default gateway address and DNS address) by default.

Before connect NeoGate TA3200 to Trixbox, you need to set a static IP address from the same LAN with the Trixbox.

**Steps to set static IP for NeoGate TA3200:**

1. Connect one analog phone in one of the FXS ports on NeoGate TA3200;
2. Dial "***" to enter the voice menu;
3. Press "1" to check the IP address;
4. Open the browser and type in the TA3200's IP address to access TA3200;
5. Log in TA3200 and go to System→Network Preferences→LAN Settings, disable DHCP and configure the LAN network, save and apply the changes, reboot NeoGate TA3200 to take effect.

Figure 2. Configure LAN Settings on NeoGate TA3200
3. VoIP Mode

If you choose VoIP mode, the FXS ports will be registered as the Trixbox's SIP extensions, which possess the same functions as other SIP extensions on Trixbox.

![Figure 3. Connect TA3200 and Trixbox via VoIP Mode](image)

**Step 1. Create a SIP extension on Trixbox.**

**Path:** PBX→Extensions→Add Extension

Create an extension on Trixbox for the FXS port on the TA3200 which has connected an analog phone. Here we take extension 300 for example.
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Step 2. Configure one VoIP server template on NeoGate TA3200.

Path: Gateway→VoIP Settings→VoIP Server Settings

Check "Enable Register", fill in the Trixbox's IP address, this VoIP server template will be a VoIP mode template.
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Server Name: Trixbox
Type: SIP
Enable Register: checked
Transport: UDP
Hostname/IP: fill in the Trixbox IP address, 192.168.5.236
Domain: fill in the Trixbox IP address, 192.168.5.236

Step 3. Edit the Dial Pattern Template

Path: Gateway→VoIP Settings→VoIP Server Settings

The default dial pattern is set as ",", which allows you to dial any number out. In this guide, we will remain the default setting. You can change it according to your environment.
Step 4. Edit the FXS port

Path: Gateway→FXS Port List→FXS Port List

Figure 7. Edit the FXS Port

**Number:** the extension number as the one you created on Trixbox, 300.

**Primary Server:** choose Trixbox(1), the VoIP server template configured in Step 2.

**User Name:** the extension username on Trixbox, 300.

**Authentication Name:** the extension authentication name on Trixbox, 9000.

**Password:** the authentication password of the extension on Trixbox, pincode9000.

**Dial Pattern Template:** Choose the Dial Pattern Template, DialPatternTemplate1(1).

Save and apply the changes, and you will see the port status is “Registered” on "Port Status" page.

Path: Status→System Status→Port Status

Figure 8. Port Status

Now, you are able to use the analog phone which is connected to NeoGate TA's FXS port 1 to make calls and receive calls.

**Note:** Outgoing calls to Trixbox extensions and to external numbers through trunks on Trixbox all should match the dial pattern, or calls will be failed.
4. SPS/SPX Mode

If you choose this mode to connect NeoGate TA3200 and Trixbox, the FXS port will be registered as a Service Provider SIP/IAX (SPS/SPX) trunk to the Trixbox. One SPS/SPX trunk to NeoGate TA also should be created on Trixbox. In this guide, we use SIP protocol, configure one VoIP server template as SPS mode on NeoGate TA3200 and create one Service Provider SIP trunk on Trixbox.

Figure 9. Connect TA3200 and Trixbox via SPS Mode
Step 1. Create a Service Provider SIP Trunk on Trixbox

Path: PBX→Trunks→Add SIP Trunk

Figure 10. Add SIP Trunk
Figure 11. Configure SIP Trunk

**PEER Details:**
host=192.168.5.13
type=peer
qualify=yes
disallow=all
context=from-trunk
allow=ulaw,alaw,gsm

After creating the SIP trunk, we can check the status of this trunk, it should be OK.

**Path:** PBX→PBX Settings→Tools→System Administration→Asterisk CLI

Enter the command “sip show peers” and click “Execute”, the status will be

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seen.

Figure 12. SIP Trunk Status

**Step 2. Edit one VoIP Server template as SPS mode.**

**Path:** Gateway→VoIP Settings→VoIP Server Settings

Do not check "Enable Register", choose SIP protocol, and fill in the Trixbox IP address, the VoIP server template will be configured as SPS mode.

![Configure the VoIP Server Template as SPS Mode](image)

**Server Name:** Trixbox  
**Type:** SIP  
**Enable Register:** DO NOT check  
**Transport:** UDP  
**Hostname/IP:** fill in Trixbox's IP address, 192.168.5.236  
**Domain:** fill in Trixbox's IP address, 192.168.5.236
Step 3. Edit the Dial Pattern Template

**Path:** Gateway→VoIP Settings→VoIP Server Settings

The default dial pattern is set as ".", which allows you to dial any number out. In this guide, we will remain the default setting. You can change it according to your environment.

![Edit Dial Pattern Template](image)

Figure 14. Edit the Dial Pattern Template

Step 4. Edit the FXS port

**Path:** Gateway→FXS Port List→FXS Port List

![Edit FXS Port](image)

Figure 15. Edit the FXS Port

**Number:** set a number for the FXS port. The number should be different from the extension numbers on Trixbox. Here we set number 100 for FXS port 1. **Primary Server:** choose Trixbox(1), the VoIP server template configured on Step 2.
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**Dial Pattern Template:** choose the Dial Pattern Template, DialPatternTemplate1(1).

**Note:** You don't need to fill in any authentication name and authentication password on the FXS port edit page if you choose SPS/SPX mode.

After saving and applying the changes, you will see the trunk is “OK” in “Line Status”.

**Path:** Status→System Status→Port Status

![FXS Port Status](image)

**Step 5. Create an inbound route on Trixbox.**

**Path:** PBX→PBX Settings→Inbound Call Control→Inbound Routes

Choose the inbound destination as IVR, when you call in Trixbox from NeoGate TA3200, you will hear the IVR prompt. The inbound route configured here match DID number 9999, users from NeoGate TA3200 should dial 9999 to reach Trixbox.
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Figure 17. Add Incoming Route

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**Step 5. Create one outbound route on Trixbox.**

To make calls from Trixbox to NeoGate TA3200, you need to create one outbound route on Trixbox.

**Path:** PBX→PBX Settings→Outbound Routes→Add Route

![Figure 18. Add Outbound Route](image)

Set the dial pattern as X., choose the trunk "NeoGate_TA3200" which is created above. In this guide, you should dial 100 to call the phone which is connected to TA3200 FXS port 1.