Contents

1. Introduction ......................................................................................... 3
2. Preparation .......................................................................................... 4
3. VoIP Mode ............................................................................................ 5
4. SPS/SPX Mode ..................................................................................... 8
1. Introduction

This application note shows how to connect 3CX Phone System to Yeastar TA FXS gateway. This guide has been tested with Yeastar TA3200 and 3CX firmware version: 12.0.35528.640.

Two modes are available for Yeastar TA to connect to 3CX, 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 Yeastar TA3200 and 3CX, FXS extensions will be extended on 3CX phone system. Once the FXS ports are connected to 3CX phone system, the phones connected to the FXS ports will be treated as 3CX Phone system's extensions. The following features can be achieved:
1. Make calls between the analog phone and SIP extension on 3CX phone system;
2. Receive incoming calls on the analog phones;
3. Make external calls from the analog phones using trunks on 3CX phone system.

Description:
IP address of 3CX Phone System: 192.168.2.152
IP address of Yeastar TA800: 192.168.2.125

![Figure 1. Connect 3CX Phone System and Yeastar TA3200](image-url)
2. Preparation

Yeastar 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 connecting Yeastar TA3200 to 3CX phone system, you need to set a static IP address from the same LAN with the 3CX phone system.

Steps to set static IP for Yeastar TA3200:

1. Connect one analog phone in one of the FXS ports on Yeastar 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 Yeastar TA3200 to take effect.

![Figure 2. Configure LAN Settings on Yeastar TA3200](image)
3. VoIP Mode

If you choose VoIP mode, the FXS ports will be registered as the 3CX's SIP extensions, whose functions are the same with other SIP extensions on 3CX.

Step 1. Create a SIP extension on 3CX phone system.

Create an extension on 3CX phone system for the FXS port on the TA3200 which has connected an analog phone. Here we take extension 100 for example.

Step 2. Configure one VoIP server template on Yeastar TA3200.

Path: Gateway → VoIP Settings → VoIP Server Settings

Check "Enable Register", fill in the 3CX phone system IP address, this VoIP server template will configured as a VoIP mode template.
How to Connect Yeastar TA FXS Gateway to 3CX

Figure 5. Configure the VoIP Server Template as VoIP Mode

**Server Name:** 3CX  
**Type:** SIP  
**Enable Register:** checked  
**Transport:** UDP  
**Hostname/IP:** fill in the 3CX phone system IP address, 192.168.2.152  
**Domain:** fill in the 3CX phone system IP address, 192.168.2.152

**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.
How to Connect Yeastar TA FXS Gateway to 3CX

Step 4. Edit the FXS port

Path: Gateway→FXS Port List→FXS Port List

![Edit FXS Port](image)

**Primary Server**: choose “3CX(1)”, the VoIP server template configured in Step 2.

**User Name**: the extension username on 3CX phone system, 100.

**Authentication Name**: the extension authentication name on 3CX phone system, 100.

**Password**: the authentication password of the extension on 3CX phone system, 64s4m99.

**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

![Port Status](image)

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

**Note**: All outgoing calls to 3CX extensions and to external numbers through trunks on 3CX should match the dial pattern, or calls will be failed.
4. SPS/SPX Mode

If you choose this mode to connect Yeastar TA3200 and 3CX phone system, the FXS port will be registered as a Service Provider SIP/IAX (SPS/SPX) trunk to the 3CX phone system. One SPS/SPX trunk to Yeastar TA also should be created on 3CX phone system. In this guide, we use SIP protocol, configure one VoIP server template as SPS mode on Yeastar TA3200 and create one Service Provider SIP trunk on 3CX phone system.

![Figure 9. Connect TA3200 and 3CX Phone System via SPS Mode](image)

**Step 1. Create a Service Provider SIP Trunk on 3CX phone system.**

1) Click "Add VoIP Provider", configure the VoIP Provider Wizard, then Click "Next".

![Figure 10. Add VoIP Provider](image)

**Name of Provider:** NeoGate_TA3200  
**Country:** Generic  
**Provider:** Generic SIP Trunk

2) Enter the Yeastar TA3200's IP and click "Next".
3) Enter External Number and Authentication ID (You can enter any number as long as it is not the same with extension numbers of 3CX, take 9999 as an example here). And click “Next”.

Note: “Maximum simultaneous calls” is four in the free version of 3CX. You can also enter the number accordingly if you have bought license from 3CX.

4) Configure the default destination of inbound route to IVR for the SIP trunk and click “Next”.

Note: If you want to change the inbound route, you can double click the trunk you want on the "Ports/Trunk Status" page after the SIP Trunk has been created.
5) Click "Skip" to finish the SIP trunk configuration.

![Figure 14. VoIP Provider](image1)

6) On "Ports/Trunk status" page, we can check the trunk status.

![Figure 15. SIP Trunk Status](image2)

**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 3CX phone system's IP address, the VoIP server template will be configured as SPS mode.
How to Connect Yeastar TA FXS Gateway to 3CX

Figure 16. Configure the VoIP Server Template as SPS Mode

**Server Name**: 3CX  
**Type**: SIP  
**Enable Register**: DO NOT check  
**Transport**: UDP  
**Hostname/IP**: fill in 3CX phone system's IP address, 192.168.2.152  
**Domain**: fill in 3CX phone system's IP address, 192.168.2.152

**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.

Figure 17. Edit the Dial Pattern Template

**Step 4. Edit the FXS port**
Path: Gateway→FXS Port List→FXS Port List

**Number:** set a number for the FXS port. The number should be different from the extension numbers on 3CX phone system. Here we set number 500 for FXS port 1. **Primary Server:** choose “3CX(1)”, the VoIP server template configured on step 2. **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

**Step 5. Configure the inbound route on 3CX phone system.**

Click “Create DID” to configure the inbound route on 3CX.
Inbound route name: From_NeoGateTA3200  
DID/DDI number/mask: 9999, which is the same with the trunk external number.  
Available ports: NeoGate_TA3200  
Office Hours: Connect to Digital Receptionist

Now you can make calls from the phone which is connected to TA3200 FXS port1 to 3CX phone system by dialing number 9999. The call will reach the IVR 800.

Step 6. Create an outbound rule on 3CX phone system.

Click "Create Outbound" on 3CX phone system.

Rule Name: To_NeoGate_TA3200  
Prefix: 9  
Call from extension(s): 100-105  
Route: NeoGate_TA3200
Strip: 1

Now, extensions from 100 to 105 on 3CX phone system are allowed to make calls to the phone which is connected to Yeastar TA3200 FXS port 1. To call the phone, you should dial 9500.

<The End>