



# Grandstream Networks, Inc.

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Configuring Grandstream GXW-4104 with 3CX Phone System



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## INTRODUCTION

This guide will help users to configure their Grandstream GXW-4104 with 3CX Phone System.



## Step 1: Prepare GXW-4104

Follow below steps to set up a GXW-4104:

1. Connect the Grandstream GXW-4104 gateway with the network using the WAN port of the gateway and connect GXW-4104 to the power supply. The device will boot up.
2. Ensure that the device is local to the 3CX server. The device should be in the same subnet and/or locally routed subnet.
3. Find the IP and MAC Address of the device on your network:
  - a. Download the Grandstream IP Discovery Tool from [here](#)
  - b. Follow the “How to use the program” instruction in the Readme.txt file
  - c. Take note of the:
    - MAC Address
    - IP Address

## Step 2: Add GXW-4104 to 3CX Server

To add Grandstream GXW-4104 to 3CX Server, follow below steps:

1. Navigate to “SIP Trunks” within the 3CX Management Console and click “Add gateway”.

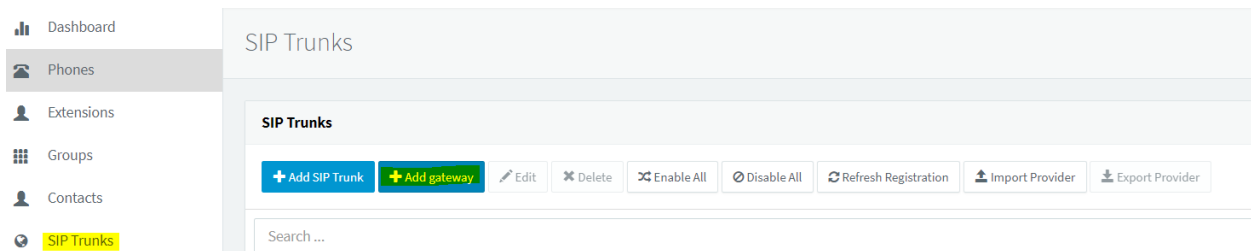


Figure 1: Add GXW-4104

2. Add PSTN Gateway
  - a. Select Brand: Grandstream
  - b. Select model/device: Grandstream GXW-4104
  - c. Number of Physical PSTN Ports on the device: 4
  - d. Main Trunk No: Define the number of the FXO lines which act as catching all destination.
  - e. Click “OK” to save the configuration.



### Add PSTN Gateway ✕

Select Brand

Grandstream ▼

Select model/device

Grandstream GXW-4104 ▼

Number of Physical PSTN Ports on device

4

Main Trunk No

1111

OK Cancel

Figure 2: Add PSTN Gateway

## Step 3: PSTN Line Setup

Follow below steps to configure GXW-4104 on 3CX Management Console:

1. In the General Tab:
  - a. Enter Registrar/Server/Gateway Hostname of IP: This is the IP address of your GXW4104 (acquired in Step1.3.c).
  - b. Copy the “Provisioning Link” which needed in later steps.



General | DIDs | Caller ID | Options | Inbound Parameters | Outbound Parameters

---

**Trunk Details**

Enter name for Trunk

Registrar/Server/Gateway Hostname or IP

Provisioning Link:

Tone Set Selection

Number of SIM Calls

Number of Physical PSTN Ports on device

**Figure 3: General Tab**

2. In "PSTN Gateway Options" under "Options" tab:
  - a. Fill in "Device MAC Address"
  - b. Select "Caller ID Scheme"
  - c. Configure the Tone sets
  - d. Fill in "Device MAC Address"

**PSTN Gateway Options**

Device MAC Address

FAX Transmission Mode

Caller ID Scheme

Dial Tone [Syntax: ch x-y: f1=val@vol,f2=val@vol,c=on1/off1-on2/off2-on3/off3; ...]. f1,f2-frequency(Hz); vol-volume(dB); c-cadence(10ms, 0-continuous)

Ringback Tone [Syntax: ch x-y: f1=val@vol,f2=val@vol,c=on1/off1-on2/off2-on3/off3; ...]. f1,f2-frequency(Hz); vol-volume(dB); c-cadence(10ms, 0-continuous)

Busy Tone [Syntax: ch x-y: f1=val@vol,f2=val@vol,c=on1/off1-on2/off2-on3/off3; ...]. f1,f2-frequency(Hz); vol-volume(dB); c-cadence(10ms, 0-continuous)

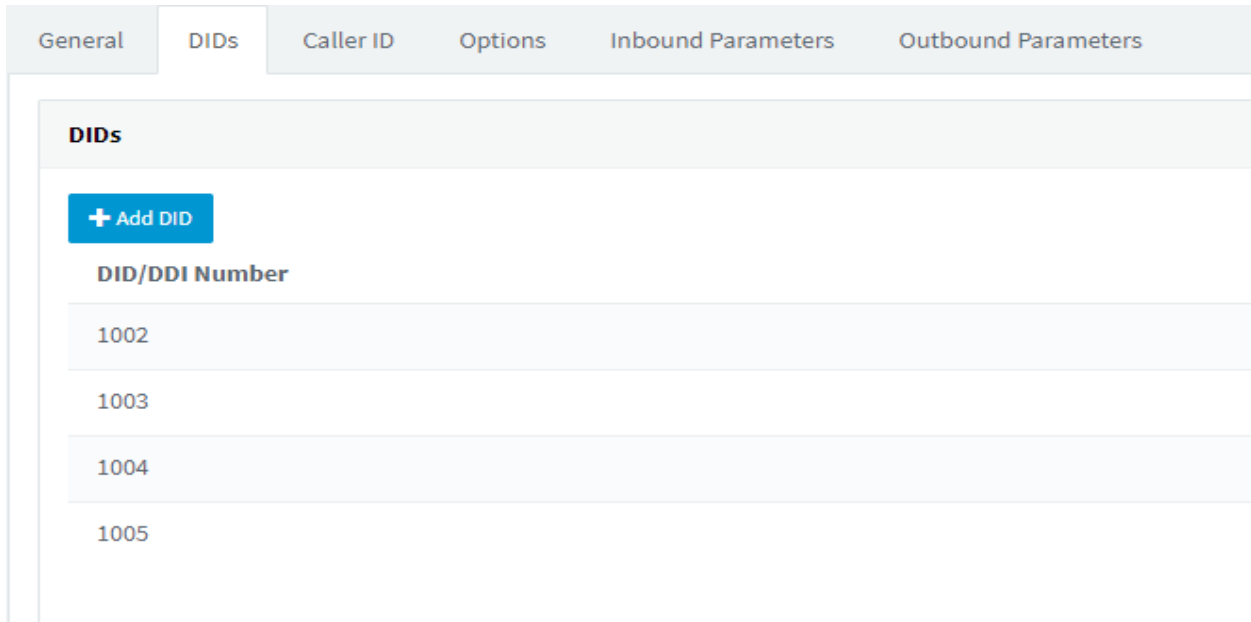
Reorder Tone [Syntax: ch x-y: f1=val@vol,f2=val@vol,c=on1/off1-on2/off2-on3/off3; ...]. f1,f2-frequency(Hz); vol-volume(dB); c-cadence(10ms, 0-continuous)

**Figure 4: PSTN Gateway Option Tab**

3. Inbound Rules:



- a. In “DIDs” tab, click “Add DID” to create DIDs. The DIDs are used to allow calls to be routed based on the port the call was received. For example, if your device has 4 ports and you want to make 4 parallel calls, please configure at least 4 DID numbers here. Take notes of these DID numbers, we will need them later.



**Figure 5: Configuring DIDs**

4. Press the “Generate device config” button at the top of the page. It will open a new tab in your browser and redirect to the device web UI.



**Figure 6: Generate configuration template**

## Step 4: Provisioning GXW-4104

Please refer to steps below to provision GXW-4104.

1. Log into GXW4104. The default password is “admin”.
2. Go to Maintenance -> Upgrade/Provisioning.
3. In the “Config Server Path” part, enter the “Provisioning Link” got in Step3.1. Make sure “Upgrade Via” is set to HTTP.





**Maintenance Upgrade/Provisioning**

Web/Telnet Access  
**Upgrade/Provisioning**  
Syslog Setup  
Security

**Firmware Upgrade and Provisioning**

**Upgrade Via:**  TFTP  HTTP

Firmware Server Path:

**Config Server Path:**

Firmware File Prefix:

Firmware File Postfix:

Config File Prefix:

Config File Postfix:

**DHCP Option 66 Override:**  No  Yes

**Automatic Upgrade:**  No  Yes, check every  minutes (default 7 days)

- Always Check for New Firmware
- Check New Firmware only when F/W pre/suffix changes
- Always Skip the Firmware Check

**Authenticate Conf File:**  No  Yes (Yes - cfg file authenticated before acceptance)

Figure 7: Provisioning GXW-4104

4. Click the "Save" button and reboot device.

## Step 5: Configuring GXW-4104 Unconditional Call Forward


Please refer to steps below for GXW-4104 channels settings:

1. Log into GXW4104 using the IP address in a browser. Go to Settings -> Channels Settings -> Calling to VoIP -> Unconditional Call Forward to Following.



GXW410X PSTN Gateway Logout Reboot

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Status
Accounts
Settings
Networks
Maintenance
FXO Lines
Line Analysis
Version: 1.4.1.5

**Settings** **Channels Settings**

---

General Settings
Call Settings
Channels Settings
SIP Channel Setting

**DTMF Methods(1-7):**  (default 1)  
(1:in-audio, 2:RFC2833, 3:1+2, 4:SIP Info, 5:1+4, 6:2+4, 7:1+2+4)

**No Key Entry Timeout(X1s):**  (1-9, default 4)

**Local SIP Listen Port:**  (default ch1-8:5060++;)

**SRTP Mode(1-3):**  (default 1)  
(1:disabled, 2:enabled but not forced, 3:enabled and forced)

**Calling to VoIP**

**Unconditional Call Forward to Following:**

**User ID:**  (i.e ch1-2:223;ch3:224)

**SIP Server:**  (ch1-2:p1;ch3:p2)

**SIP Destination Port:**  (ch1-2:5060;ch2:7080)

**T.38 FAX Settings**

(Syntax: ch x-y: mode=val,rate=val,ecm=val;[...])

**T.38 Settings:**

(mode: 1:Relay(default), 2:Passthrough)

(rate: 2400, 4800, 7200, 9600(default), 12000, 14400)

(ecm: 1:Enable(default), 0:Disable)

**Figure 8: Unconditional Call Forward**

- Configure "User ID" with your DID number for each channel. (As we set on Step3.3). Click the "Save" button and reboot the device after configuration.

Take 2 parallel calls for example:

We want 2 parallel calls and plug one PSTN line to port 1 and plug another PSTN line to port 3. And we want to route port 1 calls according to DID number 1002, route port 3 calls according to DID number 1004, then we need to configure the "User ID" section as below:



Calling to VoIP	
<b>Unconditional Call Forward to Following:</b>	
<b>User ID:</b>	<input type="text" value="ch1:1002;ch2:;ch3:1004;ch4;"/> (i.e ch1-2:223;ch3:224)
<b>SIP Server:</b>	<input type="text" value="ch1-4:p1;"/> (ch1-2:p1;ch3:p2)
<b>SIP Destination Port:</b>	<input type="text" value="ch1-4:5060;"/> (ch1-2:5060;ch2:7080)

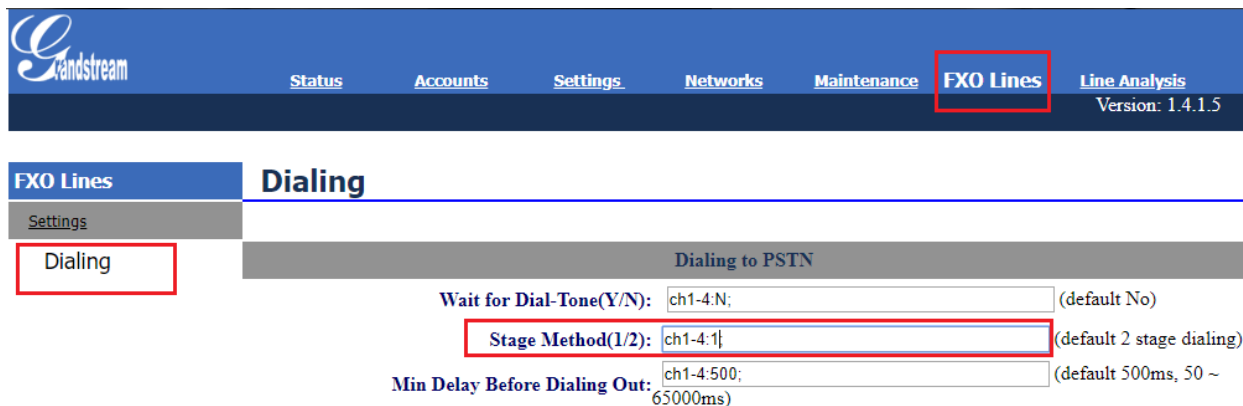
T.38 FAX Settings
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Figure 9: Unconditional Call Forward example

## Step 6: GXW-4104 FXO Lines Setting

Please refer to steps below to configure GXW-4104 stage method:

1. Log into GXW-4104 using the IP address in a browser. Go to FXO Lines -> Dialing -> Dialing to PSTN. Configure this page as follows:
  - a. Set the “Stage Method” field to “ch1-4:1;”
  - b. Click the “Save” button and reboot the device.



The screenshot shows the Grandstream web interface. The top navigation bar includes: Status, Accounts, Settings, Networks, Maintenance, **FXO Lines** (highlighted with a red box), and Line Analysis. Below the navigation bar, the 'FXO Lines' section is active, and the 'Dialing' sub-section is selected. The 'Dialing to PSTN' configuration page is displayed with the following fields:

- Wait for Dial-Tone(Y/N):**  (default No)
- Stage Method(1/2):**  (default 2 stage dialing) - This field is highlighted with a red box.
- Min Delay Before Dialing Out:**  (default 500ms, 50 ~ 65000ms)

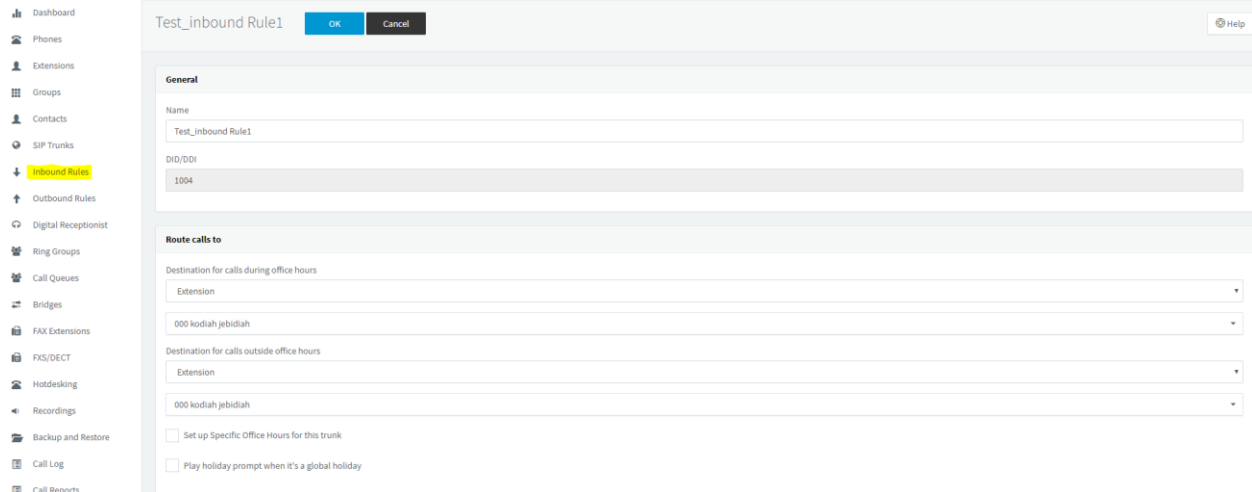
Figure 10: FXO Lines

## Step 7: 3CX Server Inbound Rules Configuration

Please refer to steps below to configure inbound rules on 3CX Management Console:

1. Go to “Inbound Rules” within 3CX Management Console, press “Add DID Rule” button
2. Under “General” tab
  - a. Name: Enter the inbound rule name.
  - b. DID/DDI: From the drop-down list, choose the DID number you created in part III.3
3. Under “Route calls to”, configure “Destination for calls”.
4. Click “OK”.





The screenshot shows the Grandstream web interface for configuring an Inbound Rule. The left sidebar contains a navigation menu with 'Inbound Rules' highlighted. The main content area is titled 'Test\_inbound Rule1' and includes 'OK' and 'Cancel' buttons. The configuration is divided into two sections: 'General' and 'Route calls to'. In the 'General' section, the 'Name' field is set to 'Test\_inbound Rule1' and the 'DID/DDI' field is set to '1004'. The 'Route calls to' section has two dropdown menus for 'Destination for calls during office hours' and 'Destination for calls outside office hours', both set to '000 kodialah jebidah'. There are also two unchecked checkboxes: 'Set up Specific Office Hours for this trunk' and 'Play holiday prompt when it's a global holiday'.

**Figure 11: Inbound Rules**

## NOTE

Additional information can be found here: <https://www.3cx.com/voip-gateways/grandstream-fxo/>

