Setting up VOIP. Using Plusnet router, Grandstream (HT 801), Andrews & Arnold (VOIP service provider). KPT. May 2024.

The Plan: Update to the latest firmware on the Grandstream ATA(Analogue Telephone Adapter). Reset the Grandstream, carry out minimal settings changes, Test, If OK then stop, not OK? Continue to set up with static IP, try 'stun'. record changes, try options. (the 'not ok' actions were not needed)

Stage 1; **Prepare** ….

Key Equipment and preparation

Plusnet Hub 2 router, Simple analogue phone, Panasonic DECT phones, Grandstream HT 801 (Firmware updated to v 1.1.53.3..see below), Uk phone adapter, UK to US adapter (to use the supplied Grandstream power unit), A&A account set up, PC .. needed to login to router and Grandstream interface. All connected and powered up. I also contacted Plusnet and arranged for the router ip address to be set as static….this may not be essential but I wanted to keep things simple.

Stage 2: steps. This worked.

1) Login in to you Plusnet router, use your router password (on the rear of the router), go to advanced settings and Firewall, set UPnP to 'off '(This is recommended by A&A elsewhere).
2) Next, update to the latest Grandstream firmware, This uses HTTP as below…
    a. Check the current setting of firmware by logging on to the Grandstream device interface. To do this first get the local address by using your attached phone and dialling "***" then "02", make a note of the address (eg. 192.168.1.240). Go to your PC, enter this address in chrome (or other browser) to open the Grandstream web interface. The default password is 'admin'. The current version number should be shown on the status page….visible when you first login.
    b. On another web page go to the Grandstream website for information on the latest version, [Firmware- Grandstream Networks](#) scroll down to Gateways and ATAs and there is the 801 (and others). At the time of writing , May 2024, the latest version was v 1.0.53.3.
    c. Log in to your Grandstream adapters web interface. Change your admin password. This is not essential but is just to improve security.
    d. On the Status page (Grandstream adapter) see which firmware version you have, if it's the same as the latest you can skip points f,g,h,j below. Assuming you are not at the latest version do the following.
    e. Go to 'advanced settings' on the Grandstream web interface. Change "Firmware upgrade and provisioning" to HTTP
    f. Change "Firmware server path" to address given by the Grandstream website ie firmware.grandstream.com.
    g. On your Grandstream web interface, scroll down, click the update button at the bottom, scroll down again, click apply, then click the reboot button. It takes some minutes. Just let it go through.
    h. Go to the status page on the Grandstream web interface again, check the version.
3) Change expiry settings. Go to 'FXS port' on your Grandstream web interface, scroll down a little, you will see 'Registry expiration' set this to 10, just after this, see 'Reregister before

Expiration', set to 300. (this is a recommended fix to a previous issue and is mentioned on the A&A web site).

4) A&A account settings on the Grandstream adapter web interface. This assumes you have already set up your A&A account and know your passwords.
    a. On the Grandstream web interface (You may need to login again). Go to 'FXS PORT' tab and set account to 'active' (top of page) then enter 'voiceless.aa.net.uk' in the field 'Primary SIP server'.
    b. Select 'Will register to Primary Server if Failover registration expires'
    c. Set 'SIP URI scheme when using TLS' to 'sip'
    d. Enter your account details, ie your number typically +44xxxxxxxxxx (using your number). Then your password for the SIP account in 'Authenticate Password'
    e. I put my initials under 'Name' too.
    f. Click the update then apply buttons at the bottom of the screen.

5) In basic settings on the Grandstream web interface.
    a. set 'IP Protocol' to "IP4 only" (keeping it simple)
    b. set time zone to GMT (London, Great Britain)
    c. Select the usual update and apply buttons (this needs to be done as as the interface can time out and you would lose recent changes).

6) In Advanced settings on the Grandstream web interface
    a. Find 'SLIC' setting and set to UK
    b. Set Caller ID to SIN227-BT

7) Select FXS port tab again
    a. Enable pulse dialling
    b. Scroll down click those buttons again, update, apply. Then reboot.

8) Wait some time, you are advised to wait 30 seconds but I found it took longer. Just wait until the three blue lights on your Grandstream 801 device are illuminated.
    a. Login to your Grandstream 801 web interface again, your status page should show port status as 'Registered' your number should also be shown and the phone should be 'OnHook' (assuming your phone is on hook). Note if you want to check further then take the phone off hook and check the status again after first selecting another page eg basic settings then going back to status. It seems the Grandstream updates the status when the page is selected, not continuously.

9) Test.: Call another phone from your connected handset, e.g. your mobile. Check dialling and that voice is bidirectional.

10) Test calling your VOIP number, eg, from a mobile, as per the registration (in my case I'd transferred my old landline to A&A). In my case nothing happened. Swapping the phone to the Panasonic DECT handsets worked fine, it was a fault on the original handset.

11) Leave and make calls in and out to see if any issues. Mine has worked without issue and the sound quality is good.

NOTEs

Only the changes mentioned above were made. Everything else was left at the default settings. I did not set up the uk specific tones (mentioned on the A&A web site).

This is a systems integration mini project where the sub systems are the internet, A&A service, Plusnet router, Grandstream adapter and Phone they all need to work together.

I had initially tried a similar approach using a Plusnet Hub 1 router. This did not work for me, despite trying Stun, and 'keep alive' settings. However this prompted a call to Plusnet who recommended a change to the Hub 2 router for a small postage fee which I did.

I also paid a small fee (£5) to set the IP address as static. I did this to keep everything simple and was expecting to set up the Grandstream device to match this. However I did not need to do this. You might want to try setting up without going for the static ip address. However this may have been the issue with the Hub 1 not working.

A few definitions: ATA (Analogue Telephone Adapter). This device, e.g. the Grandstream 801 serves three purposes. It converts the analogue audio from/to your phone to digital. It contains the information and registers your connection with your VOIP provider. Provides the interface, via Ethernet, to your router.
FTTP/FTTC. Fibre To The Property/Fibre To The Cabinet. Some homes have fibre optic 'cable' all the way to the property. This provides higher speeds. The Fibre to the Cabinet option uses conventional wires to transmit the data to your home and router. It is slower but this is irrelevant, a VOIP service has a very low bandwidth requirement.
SIP(Session Initiation Protocol) . A&A provide a good description of SIP. At the very highest level SIP is a set definitions, that because they are known by 'everyone' allows the VOIP calls to be set up.

STUN (Session Traversal Utilities for NAT) I did not need this, a stun server provides a means of obtaining your ip address….using STUN was an option if the settings above had failed.