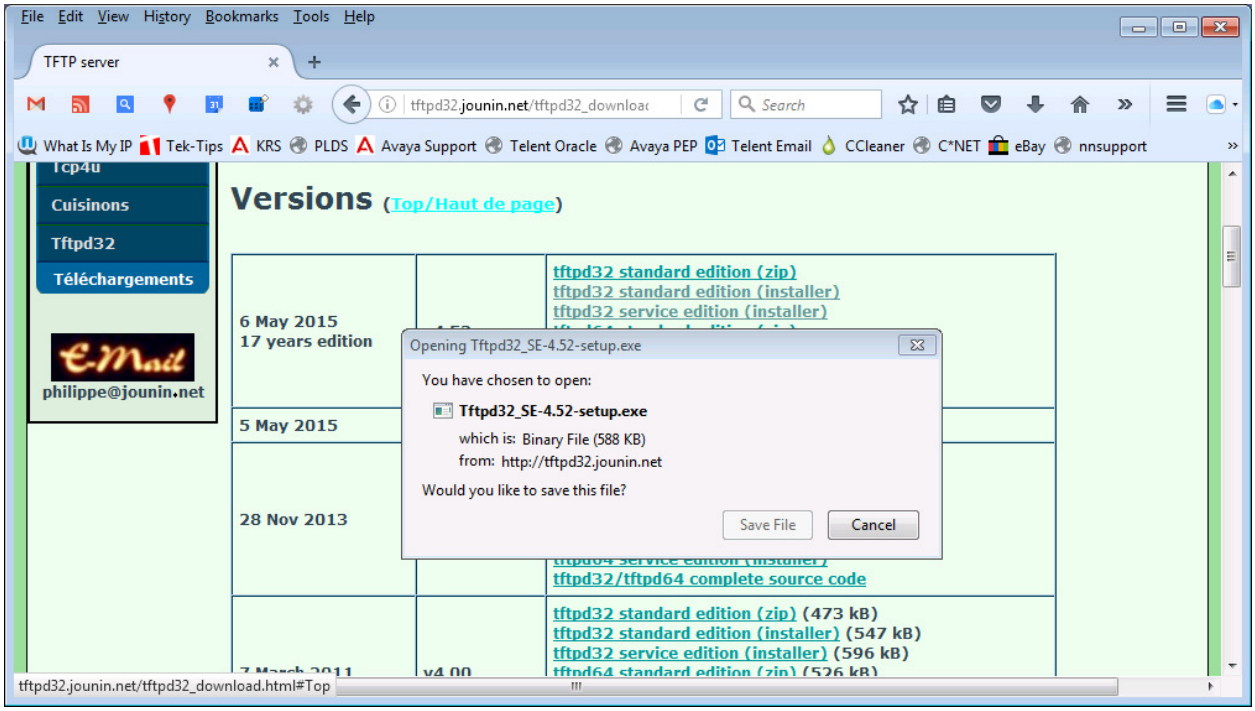
How to change the firmware on a Nortel / Avaya IP phone to UNIStim or SIP

This guide is intended to show how to upgrade or downgrade an IP phone to restore service in situations where a replacement phone was supplied with the wrong firmware installed using a TFTP server. I've also added in some problem solving tips at the end of the guide.

First of all, download the TFTP Server software. There are many versions available and the free program that I used was available at http://tftpd32.jounin.net/tftpd32_download.html

Just select the correct level if the computer is a 32 or 64 bit system. I selected the service edition as shown below.



Follow the prompts to install the software. There shouldn't be a need to reboot the computer after it's done. On the computer it's being used on, just create a folder such as C:\IPFIRMWARE etc.

Setting up the computer

Within the folder created, add in the IP phone firmware files which should all have a file extension of *.bin. Such as 0625C6J.bin for a version of Nortel 1140e etc. You also need to have a copy of the configuration file and the 1140e file is called 1140e.cfg and the 1120e is 1120e.cfg etc. The configuration file only contains a few lines of data such as the one below for an old Nortel 1140e UNIStim firmware release. If going from SIP to UNIStim firmware, then add "SIP" before the .cfg.

```
[FW]
DOWNLOAD_MODE FORCED
VERSION 0625C6J
SERVER_IP 86.130.12.21
PROTOCOL TFTP
FILENAME 0625C6J.bin
SECURITY_MODE 0
```

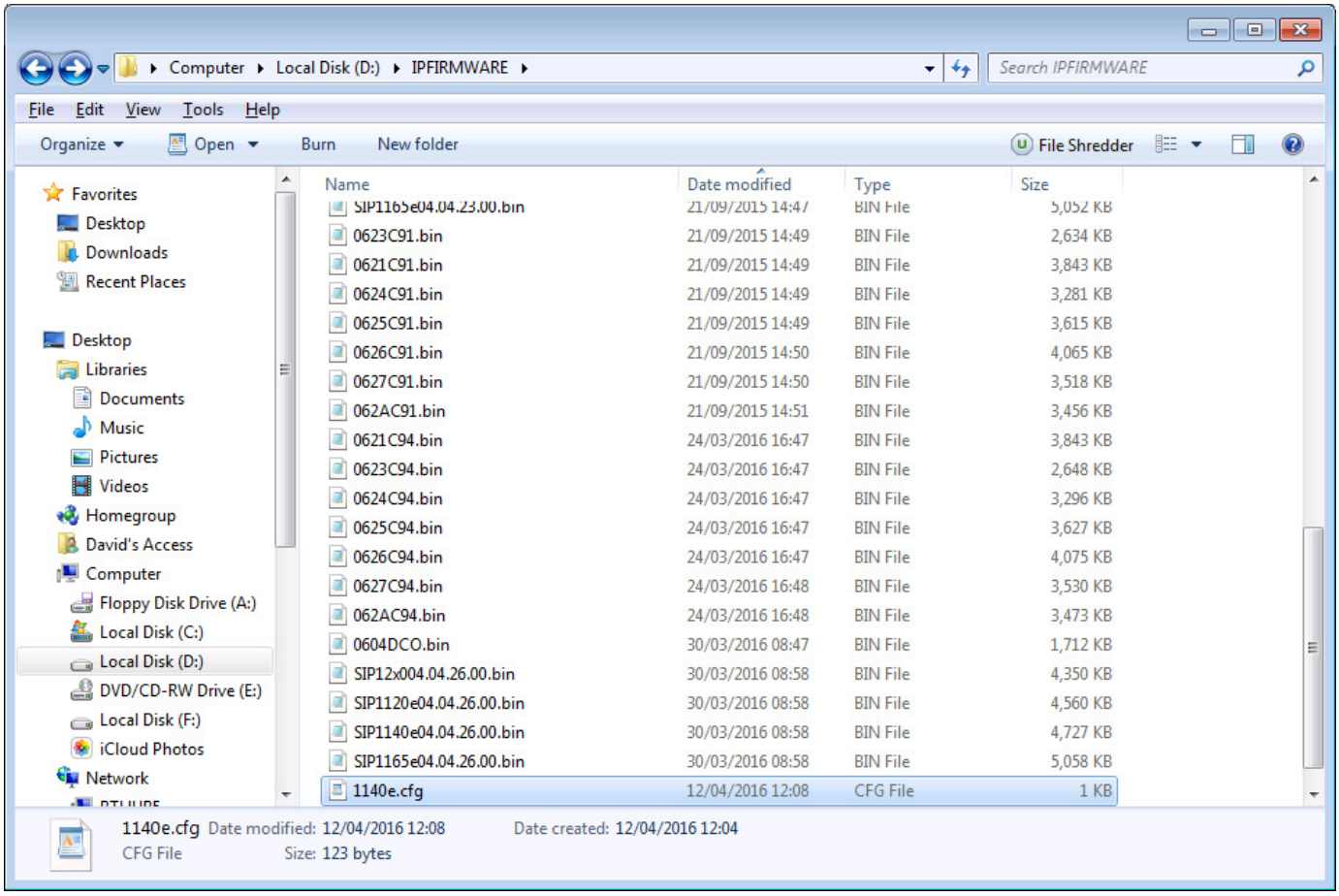
An Avaya SIP 1140e one would be something like this below.

```
[FW]
DOWNLOAD_MODE FORCED
VERSION SIP1140e04.04.26.00
SERVER_IP 86.130.12.21
PROTOCOL TFTP
FILENAME SIP1140e04.04.26.00.bin
PROMPT 0
```

These configuration files can be edited using Notepad, but be careful what is altered in them. The main areas to change are the SERVER_IP which will be the IP address that the TFTP server software is installed on. Also the VERSION and FILNAME area needs the have the firmware that will be uploaded onto the IP phone. The DOWNLOAD_MODE can be either FORCED or AUTO. If you are downgrading, then FORCED will need to be added in.

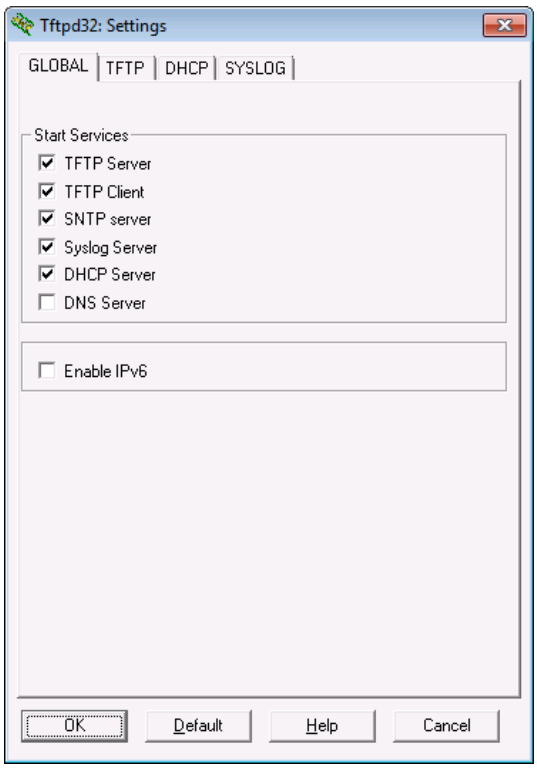
There are other slight differences such as SECURITY_MODE for the Nortel firmware and PROMPT for the Avaya firmware, although this hasn't been confirmed as being correct and therefore changes might need to be made in the file.

In my example, I had the following firmware and *.cfg file in the IPFIRMWARE folder on my computer. You can have as many different firmware files as are needed.

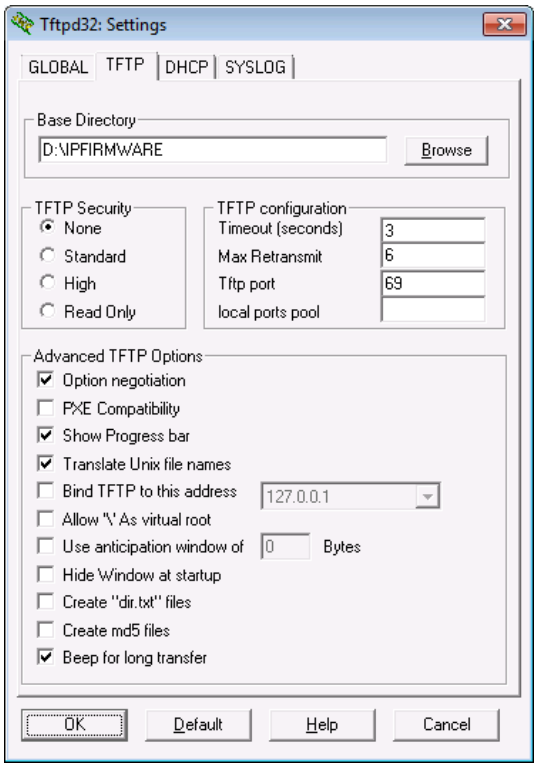


Setting up the TFTP program

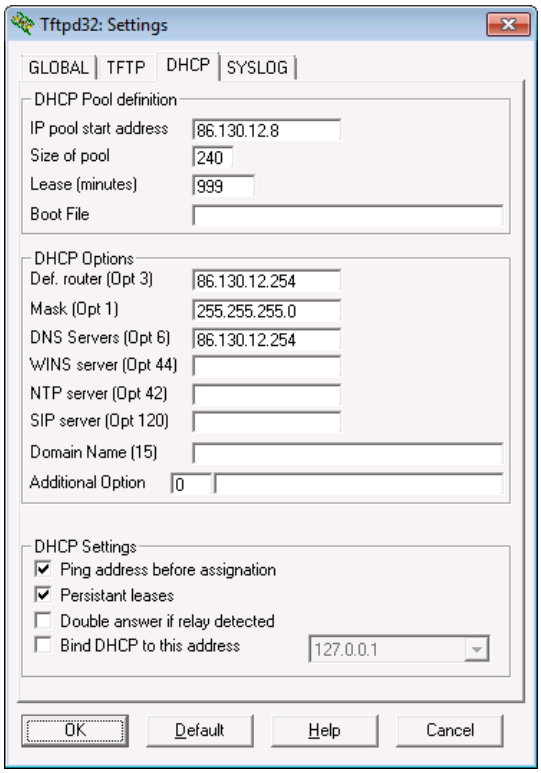
After the program has been installed, make the following changes. Open up the tool and select the setting tab at the botton on the screen. Make the changes such as selecting the **DHCP Server box.**



Select the folder where the configuration and firmware files are located. The security level can be none or standard.



The DHCP Server settings needs to be entered in and the TFTP Server needs to be within the Size of pool range. Check that the Subnet Mask and other IP settings are the same as the IP phone.



The above settings should be enough to get the TFTP Server to work.

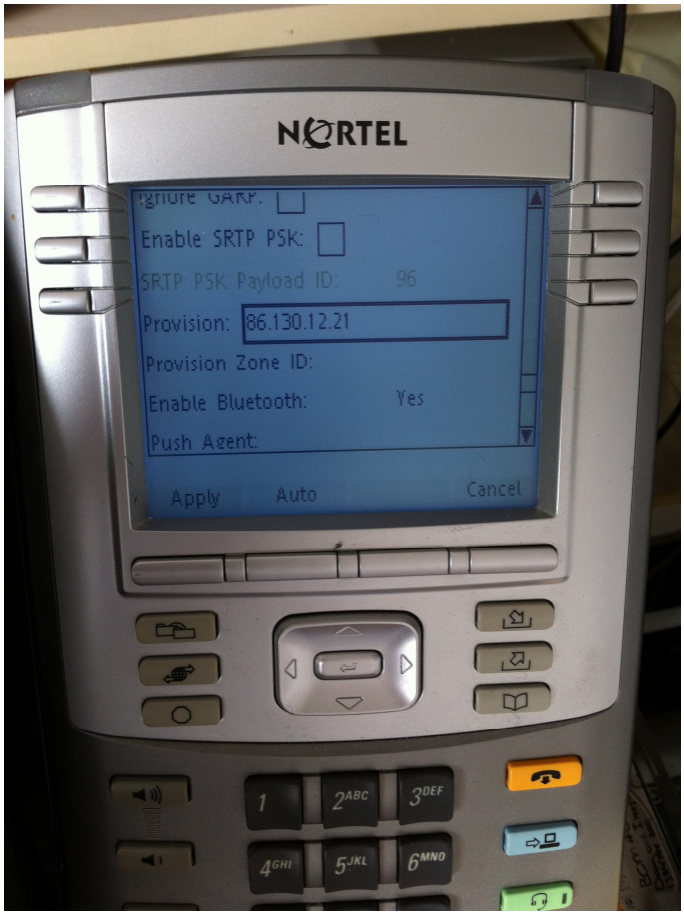
Setting up the IP phone

This part requires the user to add in the TFTP Server IP address on the 11xx / 12xx IP phone etc. This is usually done by pressing the symbol with the globe and two arrows pointing each way that is located on the left hand side by the centre button console area twice in quick succession to get a menu to appear with 4 options.

1. Preferences
2. Local Diagonstics
3. Network Configuration
4. Lock Menu

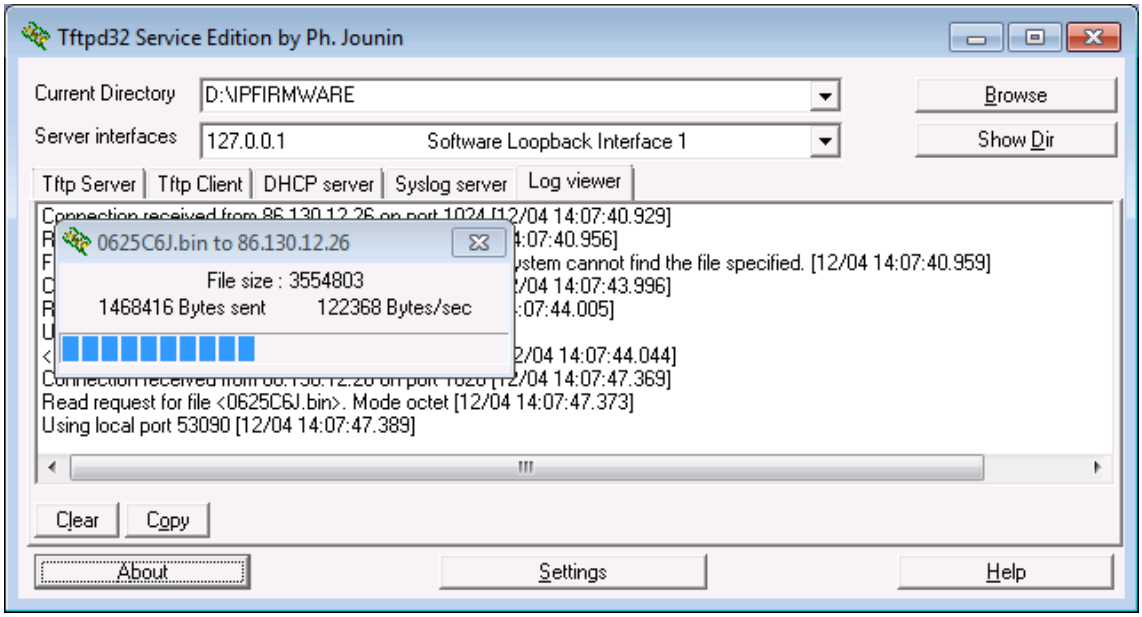
Press “3” on the keypad to get to the main area that usually starts with “EAP Mode:” etc. Press the left or right arrow (left is quicker!) to scroll through the programming until you get to the “Provision:” box and in there you should see a default of 255.255.255.255. Just change this to match the TFTP Server IP address and press OK. Finally press the “Apply” to reboot the phone.

Here is an example shown below of the settings on a 1140e phone.



If all goes OK, then after the NORTEL or AVAYA message appears, you should see a message about the IP phone trying to access the TFTP Server. At this time, if you look in the TFTP program's "Log viewer", you should see activity of something happening.

Also the program will be sending the revised firmware as shown below in another smaller window with the details and IP address of the IP phone.



Example shown below for a 1140e IP phone having SIP software loaded in.

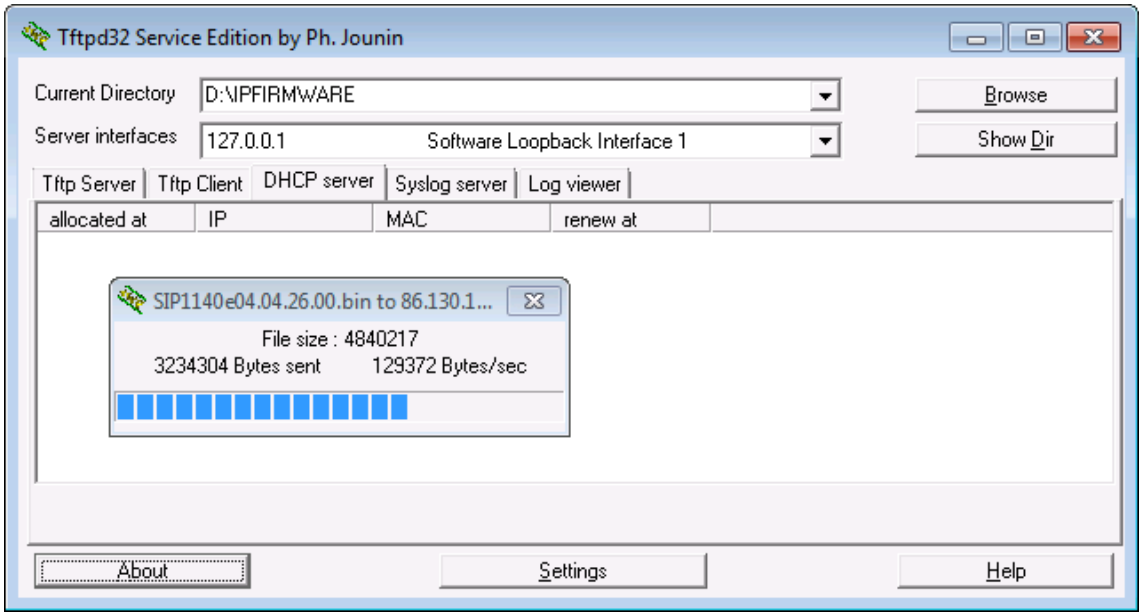
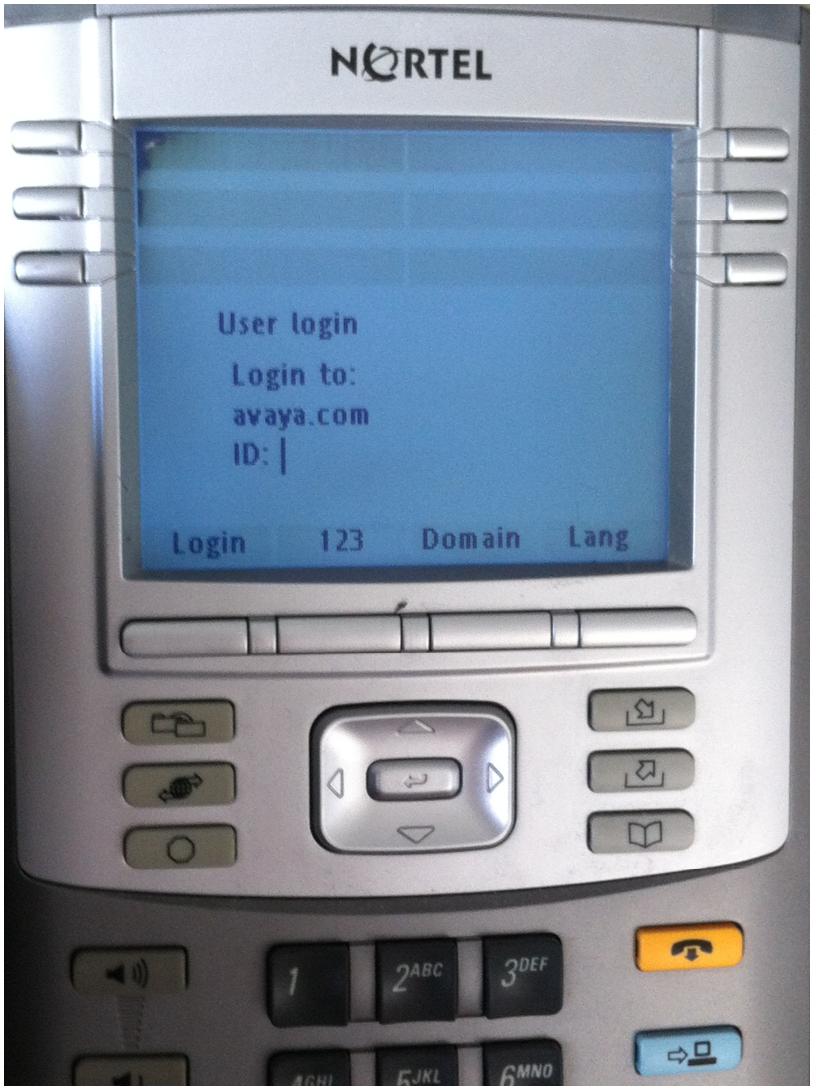
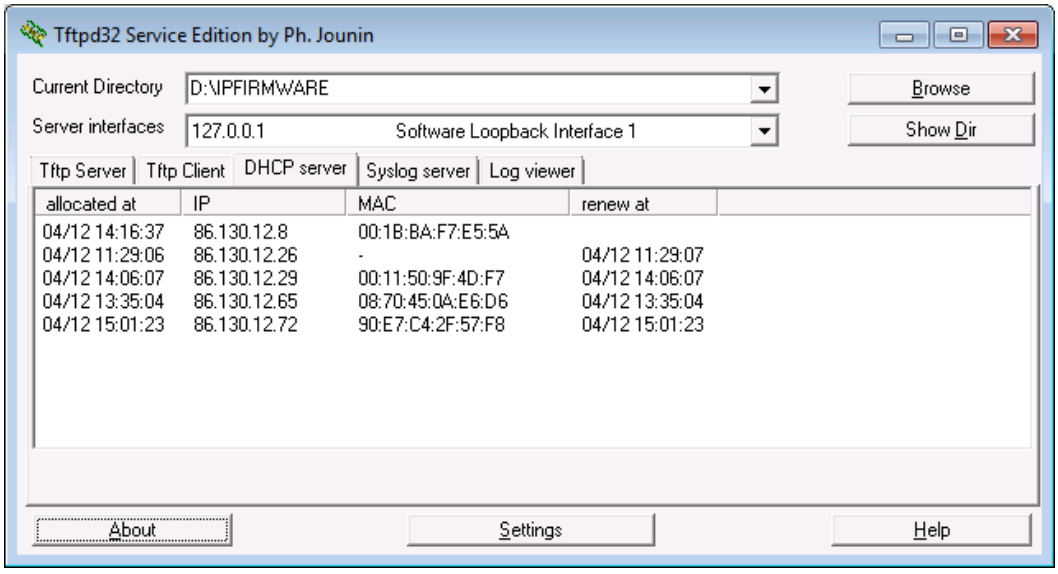


Photo of the Nortel 1140e phone with Avaya SIP software loaded in.



You can also look in the DHCP Server tab to see a list of devices connected as in the example below



Useful commands and information

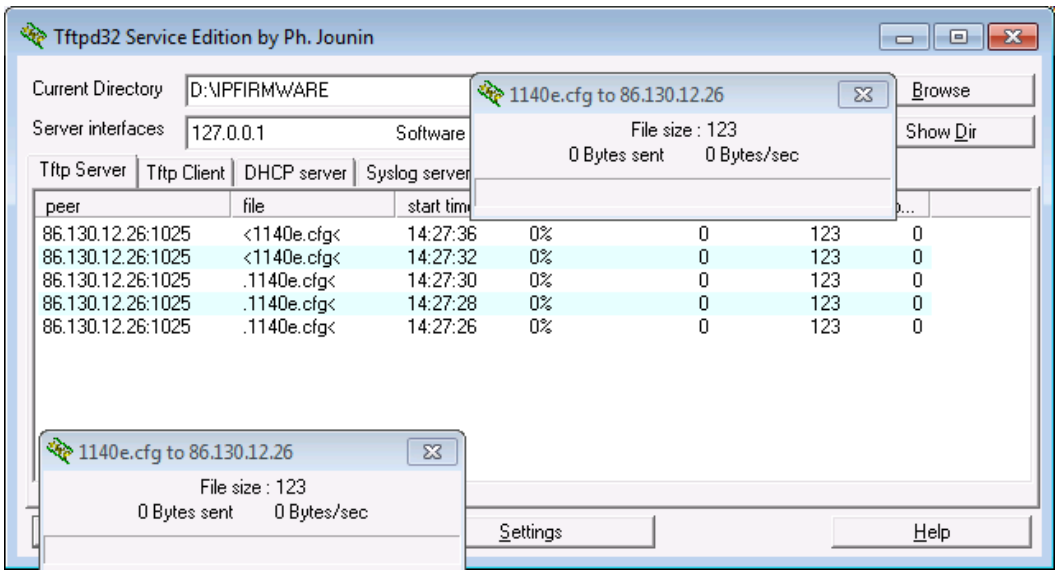
Passcode **26567*738** (spells COLOR*SET) is used to access most phones configuration area if it sticks.

Pressing the digit "**2**" and the **up arrow together** during a phone boot up takes it to DHCP mode.

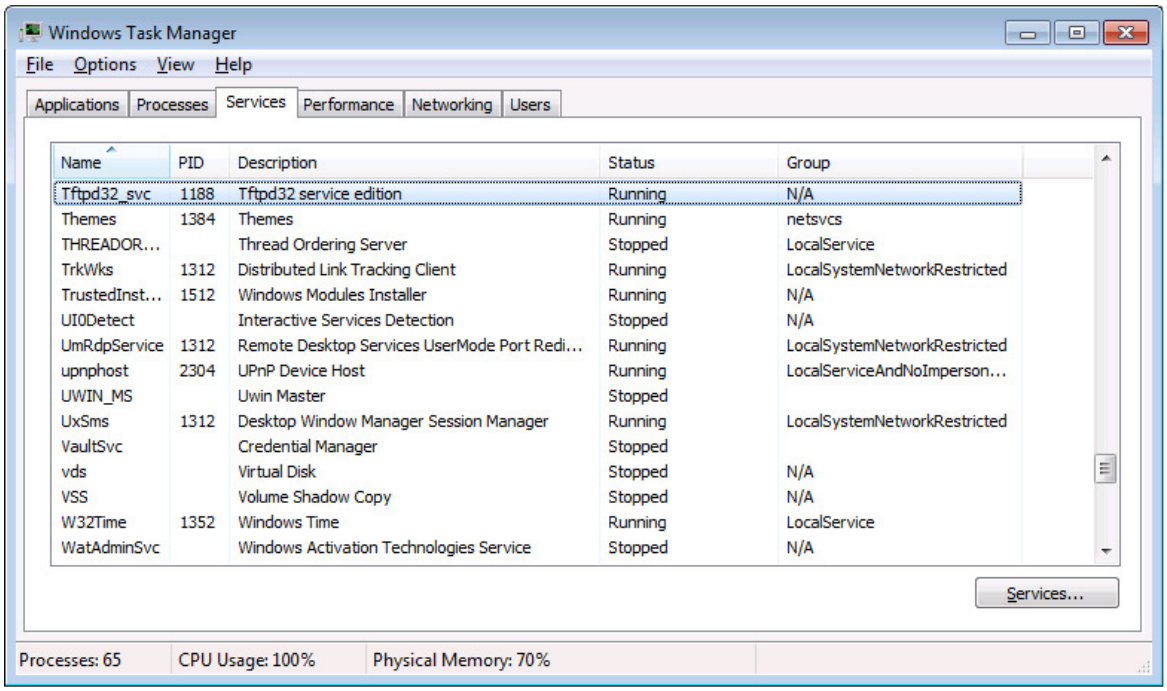
A full reset of the IP phone is done by pressing ****73639 (MAC address) ##** (spells RESET)
(Use digit "2" for letters A,B and C & digit "3" for letters D,E, and F) It's best to write the sequence down and keep on repeating it until the phone gives out the message rebooting. For a BCM connection, keep on pressing the digits even if you get an invalid number message appear!.

The configuration files to change from SIP firmware back to UNIStim format need to have "SIP" added in before the *.cfg file extension. A 1140e.cfg file will have to be remaned as 1140eSIP.cfg etc.

"0" Byte file transfers can happen if the TFTP Server isn't in a start or stop service status. The symptoms are as follows when trying to send a firmware file to the IP phone.



You can restart the TFTP Server, without having to reboot the computer by going into the Windows Task Manager Services tab and highlight the line as shown below to stop and start the service. You will also have to start up the TFTP Server program again.



I've found that I've had to do this a few times when trying out different levels of firmware.

Port 69

If the firmware is installed across a customers network, or even via the internet, then you will need to have port 69 for UDP and TCP opened up on the router to allow the firmware to work.

Hopefully, this guide will help you in changing the firmware on the Nortel / Avaya IP phones .