The 99p NAS!

If you thought that a small NAS for home use cost a couple of hundred pounds, think again. Amazing as it might seem, you can get one from just 99p! Okay, there are a few compromises - it's fairly basic and performance is not exactly stellar, but it does work. Also, you'll need to provide a hard drive for storage, although you need to do that with many of the NAS enclosures that are on the market anyway. Here's how.

At the heart of our NAS is a router, the Huawei 533. This is an-all-in one wireless ADSL router ("hub") supplied by TalkTalk to their fibre broadband customers in the UK. It's okay as far as such things go, but a lot of customers simply don't bother to use it. For instance, they may have another router that they already have or prefer, or find that the Huawei is too limited or somewhat idiosyncratic for their tastes. So, there are a lot of these things sitting in drawers or on shelves and quite a few end up on eBay. And they don't sell for very much - in fact, it's not hard to pick one up for 99p!

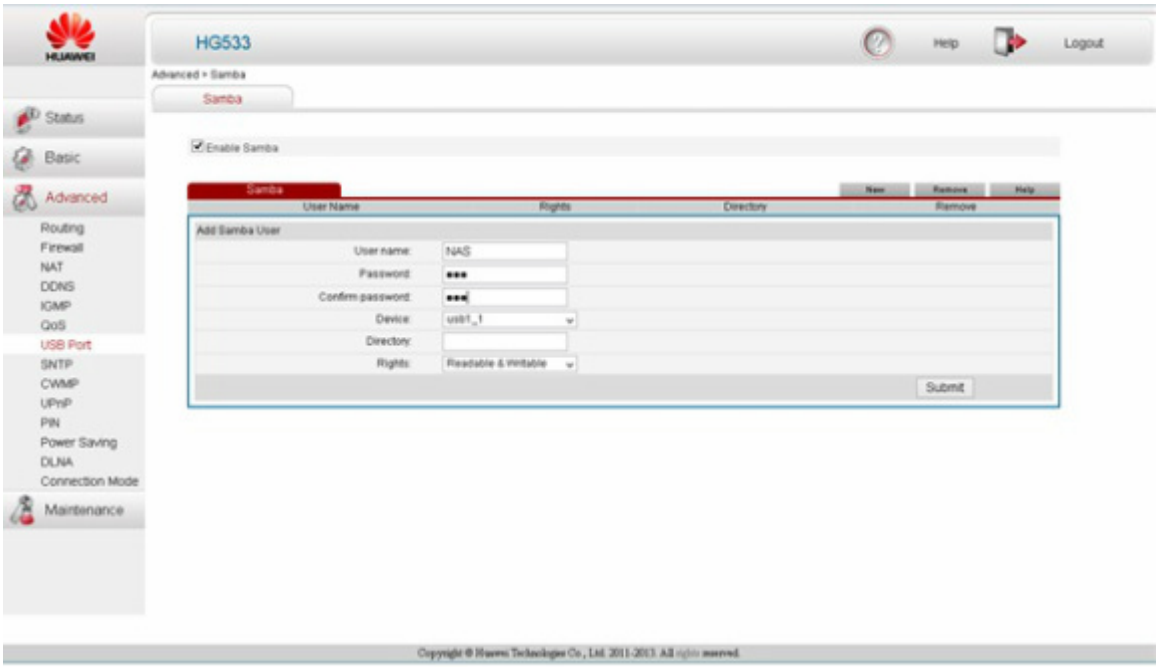
One of the features of the Huawei 533 is 'USB storage'. That is, plug a memory stick or disk drive into the USB socket on the back of it and it becomes possible to share it. What we basically need to do is switch off the general router and internet features and just use the USB storage.

To start off, we need to get the Huawei into a known state, which we can do by resetting it to the default settings. To do this, power on the Huawei. On the back is a small reset hole - press a paper clip or similar into it and keep it depressed for about 8 seconds, at which point the Huawei will reset. Once it has restarted, connect a computer to it using an Ethernet cable. The cable should plug into one of the yellow LAN sockets on the back of the Huawei. If you are doing this with a laptop, turn off the wireless connections on the laptop first. Launch a browser (Internet Explorer, Firefox, Chrome etc) and type in a web address of 192.168.1.1, which is the default address for the Huawei. It should display the Huawei's login page - login using the ID of *admin* with a password of *admin*.

Having logged in, click the **Wireless** tab. Remove the tick from the **Wireless Enabled** box and click **Save**. Click the **Advanced** tab. Acknowledge the warning message about it being for the use of advanced users only. Click the **Basic** tab (yes, I know we've just switched into Advanced mode but this is an idiosyncratic router, remember!). Click the **WAN** tab. Remove the tick from the **WAN Connection Enabled** box and click **Submit**. After the screen refreshes, click the **LAN** tab. Under **DHCP server**, remove the tick from the **DHCP Server Enabled** box and click **Submit**. You may need to change the IP address of the router, which is under **LAN Host Settings**, so it is compatible with your network's IP scheme and doesn't conflict with your main router. Use an IP address that is adjacent to that of the router; for instance, if your router is on 192.168.1.1 you might want to make the Huawei 192.168.1.2. Click **Submit**.

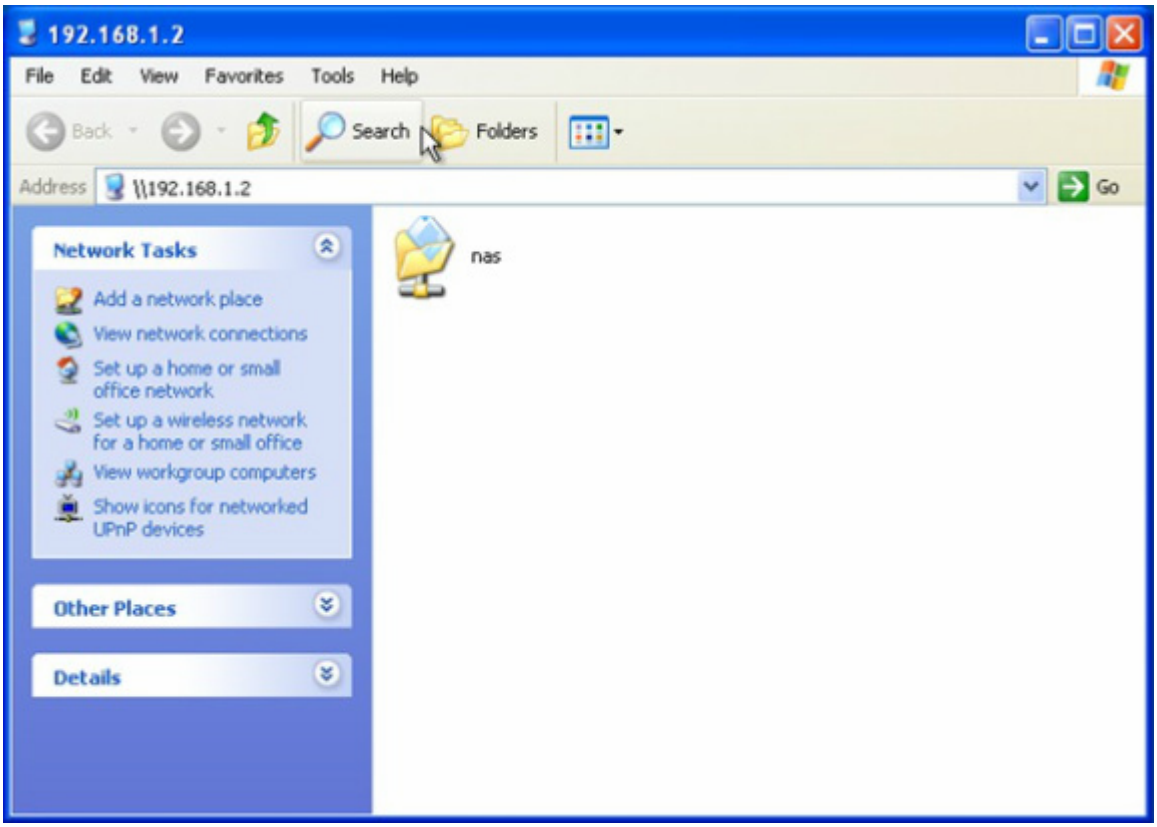
Leave the router for a minute or so, then switch it off and unplug it from your computer. You now need to find an USB disk drive to use, which can be a USB pen drive or a USB external hard drive. The drive will need to be formatted, so don't use one that has important data on it without backing it up first! The drive can be formatted as FAT32 or NTFS, although FAT32 seems to give better performance. One possible issue is that Windows will only allow you to format a drive to 32GB using FAT32, so what do you do if you have, say, a 500GB drive? The answer is to use a third party utility such as fat32format (Google it, and be careful

what you download). Having obtained/prepared the drive, connect it to the USB socket on the Huawei. Plug the Huawei into a spare Ethernet socket on your router and switch it on. Allow it to settle for a minute or two. Launch a browser and enter the new IP address of the Huawei (in our example, 192.168.1,2). Login using *admin, admin* and click the **Advanced** tab.



Click **USB Port**. Make sure the **Enable Samba** box is ticked. A blank form is displayed, in which you can 'Add Samba User'. Specify a **User name** - let's say *NAS*. Specify and confirm a password - let's say *nas*. Change the **Rights** to **Readable & Writable**. Click **Submit**.

It's fair to say that the Samba implementation is 'a bit unusual'. In theory you can create multiple users with their own passwords, thus providing a degree of security. But in practise it is better to have a single user account that everyone shares.



At this point you should be able to access the shared folder from your computers. Click **Start** (right-click **Start** on Windows 8.1) and choose **Run**. Alternatively, hold down the Windows key and the letter R together. In the resultant dialogue box enter \\192.168.1.2 (or whatever IP address you gave the Huawei). If you are prompted for a username and password, enter *NAS* and *nas* and click the box to remember your name or user credentials. You can also use Windows Explorer to find the folder, and/or map it to a drive letter for convenience.

Within the NAS folder you can create as many sub-folders as you desire, for instance one for each family member, one for music, one for photos and so on.

As mentioned in the opening paragraph, performance is not outstanding. FAT32-formatted drives are faster than NTFS ones. Proper hard drives are faster than USB memory sticks. Ultimately, the Huawei has a relatively slow processor and is limited by its 100Mbit (rather than Gigabit) Ethernet ports. However, read & write speeds in the order of 4MBytes/sec can be achieved, meaning 1GByte can be transferred in about 4 minutes. But then, it may only have cost 99p!