

# Playing Movies on My Television

*Or: How I Stopped Worrying about USB Sticks and Connected an External Hard Disc Drive to My Apple Airport to Stream Files to My AC Ryan Playon!HD Mini media player*

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## 1 Introduction

For many years I have been searching for a simple method to send media files to a storage drive connected to my local network, for the purpose of accessing them with some kind of media player so that I can play them on my television. It began with a modchipped Xbox running XBMC, but the main limitation of this device was that it was not possible to connect an external drive. Instead I had to burn movies to a DVD disc in order to play encoded movies, such as XviD or DivX. I thought this was quite annoying for two reasons. The first is that the Xbox made considerable noise in operation. The second was that DVD discs could not be used in rewritable mode, so it resulted in a vast disorganized pile of DVD discs in the bookcase.

As the years passed by, televisions with built in mediaplayers started becoming commonplace. Now I could transfer a DivX encoded file to a small USB stick, plug it into a USB port on the television and play the movie with a media player built into the TV. This was already far more convenient, as a USB stick is silent in operation and can be re-used over and over again. But it did still require me to literally **walk** to the television and physically insert the USB stick into the USB port. This is clearly not the 21<sup>st</sup> century way of doing things. And because solid state memory is still relatively expensive, USB sticks are generally less capacious than external hard disc drives. So you have to regularly delete files, which is an inconvenience. I was still looking for a better solution. However, the problems persisted even after acquiring an AC Ryan Playon!HD Mini media player with networking capabilities. While I could play files from my computer via SMB, I could still not transfer files to a USB stick connected to the media player itself.

But then, by creatively combining various bits of hardware at my disposal, I finally found a method that works perfectly. In the next section I will elaborate on the methods of my

solution.

## 2 Materials and Methods

Below I shall elaborate on the pieces of hardware required for my solution to work. There is no doubt in my mind that it would be possible to achieve the same result with more expensive, or newer, media players. For example, a media player based on a Raspberry Pi is a good option. But as I don't like wasting good hardware that I already own, I set out to achieve my objective without having to buy any new devices. In the following subsections I will elaborate on the hardware I used in my setup.

### 2.1 The Router

I use an Apple Airport Extreme 802.11n (fourth generation), running version 7.6.4 of the firmware. You will need this, or any other equally router that features a USB port to which you can connect external storage devices. The so-called 'shared disks' option on the Airport Extreme will enable you to store and retrieve files from any computer connected to the local network. I have found it convenient to use MAC address filtering to assign static IP addresses to all my computers, the media player and network printer via DHCP. Before connecting the external disk to the router, I formatted it with HFS+ as that is the preferred filesystem for the Airport Extreme. It is also wise to configure the Airport to require a username and password to access to the disk. That will make it harder for hackers to read or change your files, should they gain access to your network.

### 2.2 The Powered USB Hub

The Apple Airport Extreme does not feature a powered USB port. Obviously an oversight from Apple. Thus, if you wish to connect an external 2.5" hard disk drive to the Airport Extreme, or any similarly handicapped router, it is necessary to do so by using a USB Hub that is powered by its own adapter. Thankfully, I already own such a device.

### 2.3 The Media Player

I am fortunate enough to also count among my possessions a AC Ryan Playon!HD Mini media player (what a ridiculous name by the way, utter nonsense), sporting a network port that I can use to connect it to the Airport Extreme. I am currently using firmware version 7.4.6.r8755, which is the most recent version I could find. It works and that's good enough for me.

## 2.4 Putting It All Together

This is how everything works together. I connect the formatted USB 2.5” hard disk drive to the powered USB hub—so that the USB disk gets sufficient power to function—and then connect the USB hub to the Airport Extreme. On the Airport Extreme I enable ‘shared disks’ access with accounts and set it up to require a username and password. Then I connect the AC Ryan Playon!HD Mini media player to the Airport Extreme with a cat5 network cable. Using the fixed IP address of the Airport Extreme (in my case 10.0.1.1), you can use the media player to access the USB disk at that address using the username and password you created for shared disks on the Airport Extreme. And it is now also possible to access the shared disk on the Airport Extreme via your Apple computer or a Windows based system. When you connect to the shared network drive, you can simply upload a movie from your computer to the shared disk and then access that movie from the shared disk with the media player to play it on the television. Neato!

I have not yet tested this setup with a computer running GNU/Linux, Solaris, BSD, etc..., but I imagine it should be possible to do use this configuration with any reasonably modern networking enabled operating system. And that, in a nutshell, is all there is to it.