

HTTP Network Video Server

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A new feature found in the TriCaster 410, 460, 860 & 8000 system is the Network Video option located in the NET inputs. If you have looked at this option, you have probably seen the example URLs that you can use, but still might have some difficulty getting it to work or just don't understand what this feature will allow you to do. This document can help; it will explain how to setup a simple HTTP server on a Windows PC that you can use to stream video into a NET input.

Here is what you need to make this all work.

- A TriCaster XD410, XD460, XD860 or XD8000 (updated with rev 2-2 software) system.
- Another computer that will be running the HTTP server. The server we are using in this document is available on Windows. A 'full power' HTTP server (Apache, IIS or nginx) can be used but setting that up is beyond the scope of this document.
- HTTP File Server (HFS) software which can be downloaded from this link.
<http://www.rejetto.com/hfs/>
- Gigabit network between the systems being used.

A few things before we get started. This document was written to give you an idea on how these Network Sources operate. What this document will setup for us is something similar to a DDR, but it is not as flexible as the DDR in the TriCaster are. They do not feature options like auto play and there is no ability to scrub the video, mark in/out points or even pause. Once the video plays, it always starts from the beginning, plays to the end and stops.

What is the use of a Network Sources? You could configure it to pull video from a location across the internet. Instead of having to first transfer the video file locally to the TriCaster, the other location can make it available on a server and the TriCaster pulls the clip in as it plays it, giving the remote location more time to produce this video, knowing that they don't have to transfer it in its entirety for it to be played.

Another use can be to pull live video sources across the internet as well. One could produce an event in one location and stream it, while another location pulls the stream in as a source to use in their production.

One factor that must be accounted for in the above examples is that enough bandwidth needs to be available so the real-time playback can occur. This typically isn't a problem on a local network, but as soon as you are pulling video over the internet, this becomes critical factor that must be accounted for if this feature is to be used successfully. This document doesn't go into how to setup all of these examples, but after you see how it works with a local server you will have a much better idea on how you might be able to take advantage of it.

Supported Streaming Protocols

Let's talk about the streaming protocols so you know which ones can be used. You will notice that example URLs shown in the Network Video configuration panel, all start with "http:" or "rtmp:" or something similar. They look very much like a web link.

HTTP (HyperText Transport Protocol): This is probably the protocol you are most familiar with, this is the standard protocol used by web browsers to transfer text and images when viewing web sites, but the protocol can be used to transfer anything, including video. While protocol isn't as optimized for real-time audio/video communication, it is commonly used for this function.

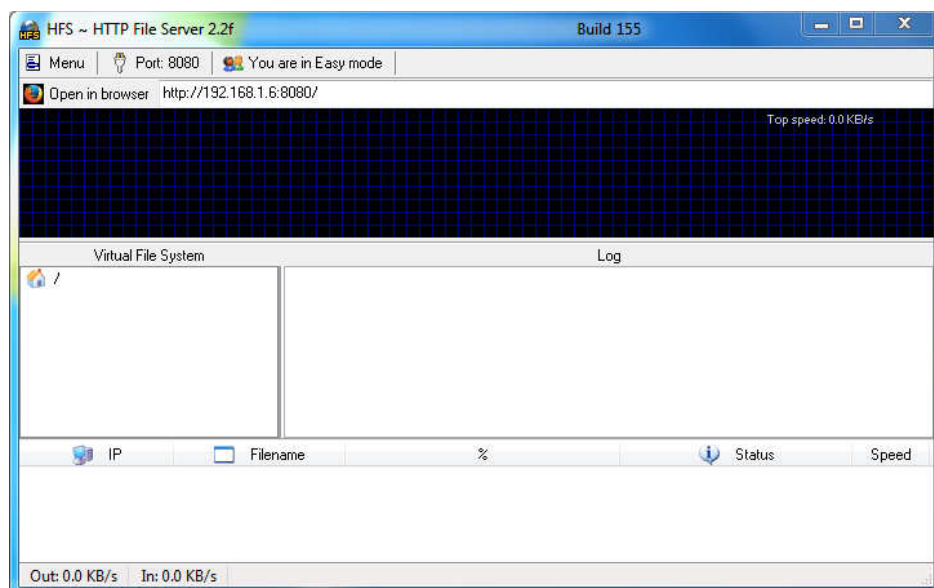
RTMP (Real-Time Messaging Protocol): This protocol is designed for low latency communication. This makes it a better option for transfer video information and is the protocol used by Flash for streaming video.

RTP (Real-time Transport Protocol): Another protocol designed for sending video and audio over networks.

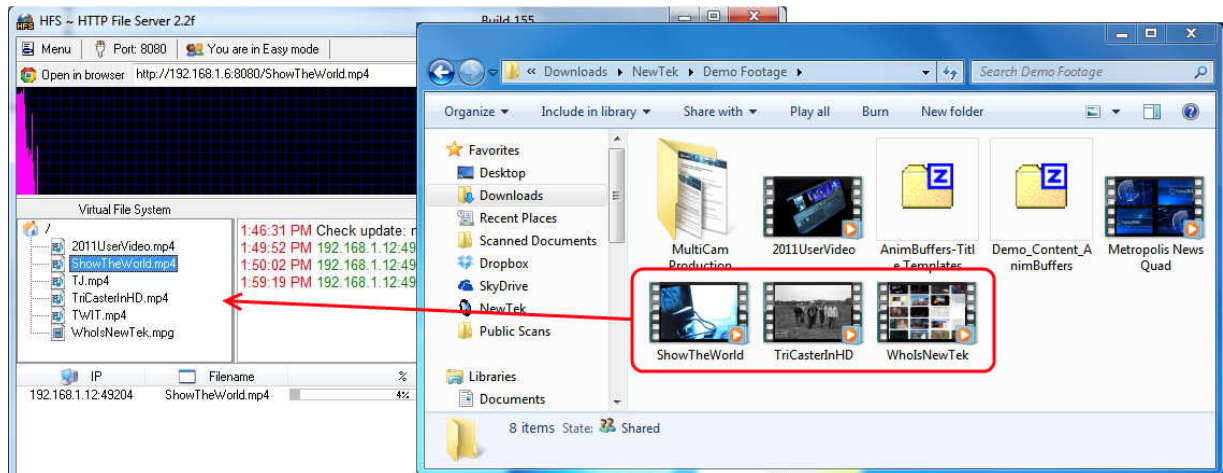
RTSP (Real-Time Streaming Protocol): This is a control protocol, which in itself doesn't transfer audio/video information, but instead sends commands to the media server (like play, stop or pause). It will use another protocol (like RTP) for streaming of the video.

Setting up a HTTP server for video streaming

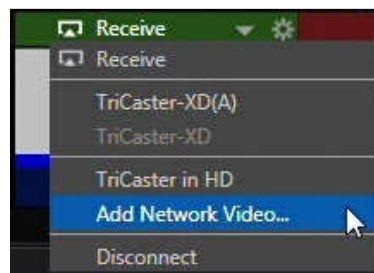
Download HFS and open it on the computer that will be server. HFS doesn't have to be installed, so just put the software anywhere you want to run it from (like the desktop) and double click on it. When it opens, you will see a window similar to below.



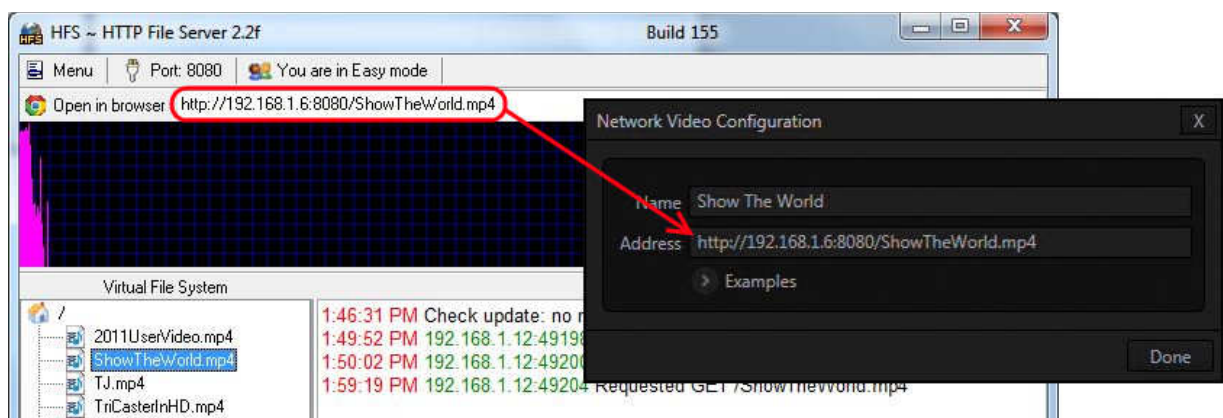
To import clips, just drag video files from anywhere on your computer into the HFS window. You will see them appear in the middle left panel in the interface.



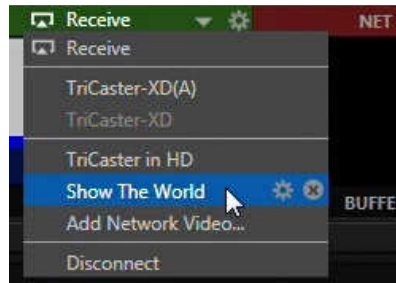
On the TriCaster, in one of the Network inputs, open the drop down menu and choose 'Add Network Video...' from the list.



In the HFS application, click on a file in the middle left panel, you will see the full URL for it displayed at the top of the window. Type this URL exactly as shown into the Address field on the TriCaster's Network Video Configuration window.



When you click 'Done', this Network Video configuration will be added to the drop down list of both NET inputs. To play this video, click on the drop down on the NET input you want to play the video in and then choose your Network Video name from the list.



The HFS window will also report back information while the video is playing. If you look at the bottom panel of the HFS window, you can see the files that are being sent along with how much of the file is left to transmit. While this information doesn't tell you how much time there is left to play, it will give you an idea of how much of the file has been sent and how much is left to go.

IP	Filename	%	Status	Speed
192.168.1.12:49204	ShowTheWorld.mp4	4%	12,651,424 / 309,515,525 sent	890.7 KB/s

If your file doesn't play (and HFS isn't showing anything as being sent), you probably typed the URL incorrectly. You can edit a Network Video by clicking on the drop down from a NET input and then clicking on the gear next to your Network Video name. After editing the URL, select 'Disconnect' from the NET drop down list, then select your Network Video name again to play your video.

If HFS shows a file being transferred, but your NET input isn't displaying or is incorrectly displaying video, then your video file probably isn't in a format that the NET input can decode correctly. While the Network Video will playback many different file types and codecs, the list of what it can play isn't as extensive as what you can play in a DDR. For example, clips with alpha channels do not play in a Network Video correctly, while they will work in a DDR.

If your file is playing, but there is stuttering in the playback, then your video clip's data rate is too high for your network. You shouldn't have a problem with playback when working over gigabit Ethernet, but if you are transmitting over 100mbit or even wireless networks then you need to make sure that you are not trying to transmit data faster than the network can handle.

When the file is finished playing, the video will stop on the last frame. There is no auto play like function that will perform a transition when the end of the video clip has been reached, so you do need to be ready to perform the correct action at the end of your video. There are also no options like loop or list mode playback either. If you want to play the clip again, you must first select the 'Disconnect' option in the NET drop down list before you can select Network Video name again.

Macros can be very helpful for playback of Network Video sources. Build a macro that selects the correct Network Video from the drop down and assign it to a shortcut. Now you can playback this clip anytime just by pressing that shortcut.