

MTSageTV – A SageTV Network Encoder Plugin for MyTheatre

Overview

The concept behind this software is to harness the power of two excellent software solutions for use in my HTPC Setup. The intent was to marry the DVB hardware/software support provided by MyTheatre, with SageTV - The best HTPC Personal Video Recorder and Media center software currently available (at least in my opinion!).

Simply, this plugin enables MyTheatre to act as a Network Encoder for SageTV. This provides SageTV with access to MyTheatre's support of a diverse set of DVB Hardware via native or BDA device drivers.

This plugin has been developed & tested using Delphi 2005 on Windows XP Service Pack 2. Basic functional testing has been performed with the following hardware configurations:

- Hauppauge NOVA-T (Hauppauge 2.17g & 2.18c & TechnoTrend 2.17g & 2.19 Driver)
- TwinHan VisionPlus DVB-T (BDA 1.2.1.9 Driver & DTV 2.606 Driver)
- FusionHDTV DVB-T USB (BDA Driver included with FusionHDTV 3.2)

Currently, the plugin is compatible with MyTheatre V3.x, SageTV 2.2.8 and SageTV 4.0. The plugin is also compatible with SageTV 4.1.x, but I don't currently recommend it's use. This is primarily due to random occurrences of video/audio freezing accompanied by 100% CPU utilization with this version of SageTV.

Disclaimer

As the author of this plugin, I can and will take no responsibility for any problems or accidents that might happen in the process of using his program. Any brand names mentioned are the property and copyright of their respective owners.

Do not rush out and buy any of the above listed hardware or a new DVB card to validate the plugins functionality in your HTPC setup! If you have existing DVB hardware, please test this plugin and report your results!

Contact Details

I can be contacted via peterjb on the SageTV forums! See the [MyTheatre DVB Network Encoder Plugin](#) thread for advice and support in the use of this software.

Acknowledgements

- Thanks to Anders & Yoja for the original DVBCore network encoders as a source of ideas for this project
- Thanks to Saar for producing an excellent product in MyTheatre. Don't use a cracked version – Buy it! Saar deserves recompense for his efforts.
- Thanks to the guys at SageTV – Excellent product! Keep up the good work!

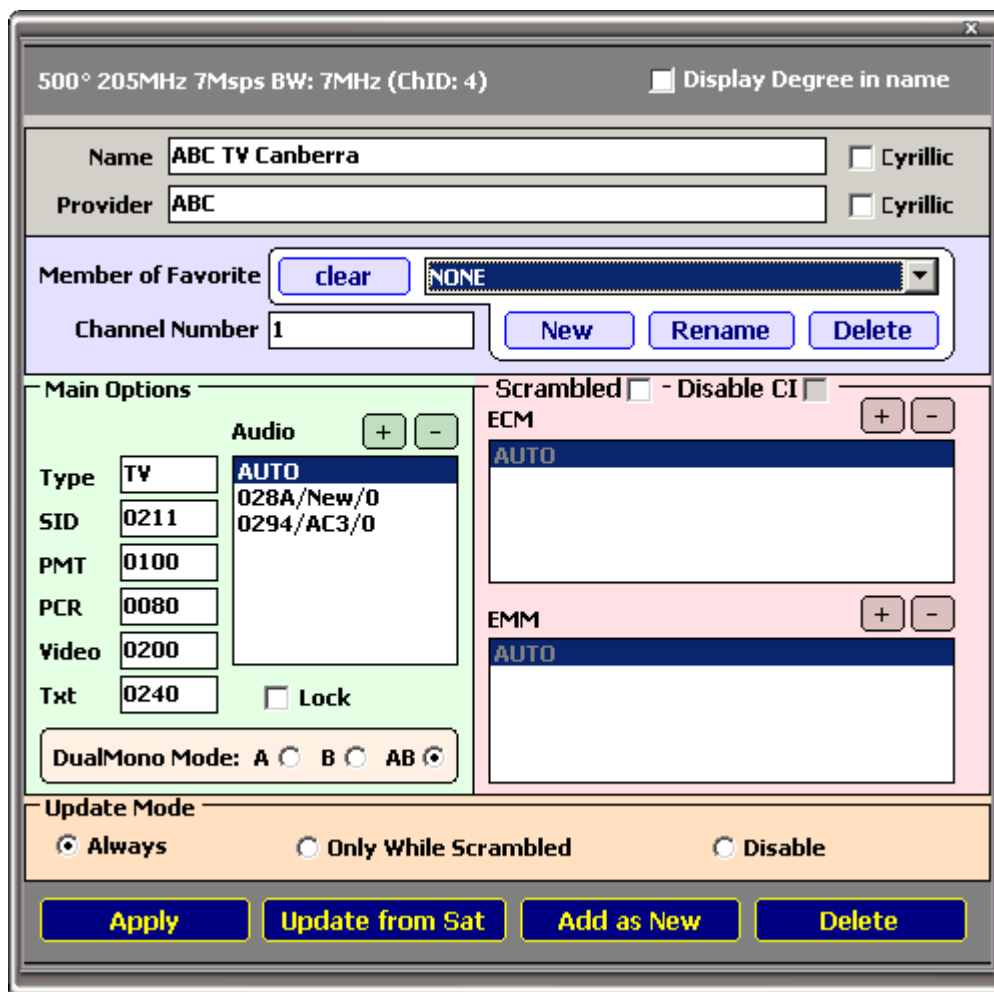
MyTheatre Setup & Configuration

I'm not going to go into detail about how to setup & configure MyTheatre. There are so many possible DVB Hardware & Satellite configurations that I simply could not cover them all. (Plus I only have a DVB-T card!). As such, I'd suggest that you head over to the MyTheatre Support Board at <http://board.mytheatre.ru/> and consult the [HOW TO, Tutorials and Knowledge Base](#) forum for setup & configuration information and the [Hardware](#) forum for information regarding hardware support.

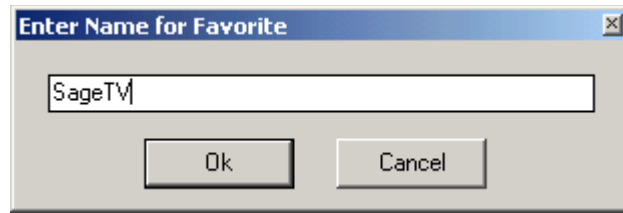
What we will detail in this section are the steps required to configure MyTheatre to work with the plugin.

1. Create a New Favourite List

Go the properties tab for a channel (right-click->Properties) and select “New” in the Member of Favorite section.



In the new window enter SageTV (Or any other name you'd like), and click OK

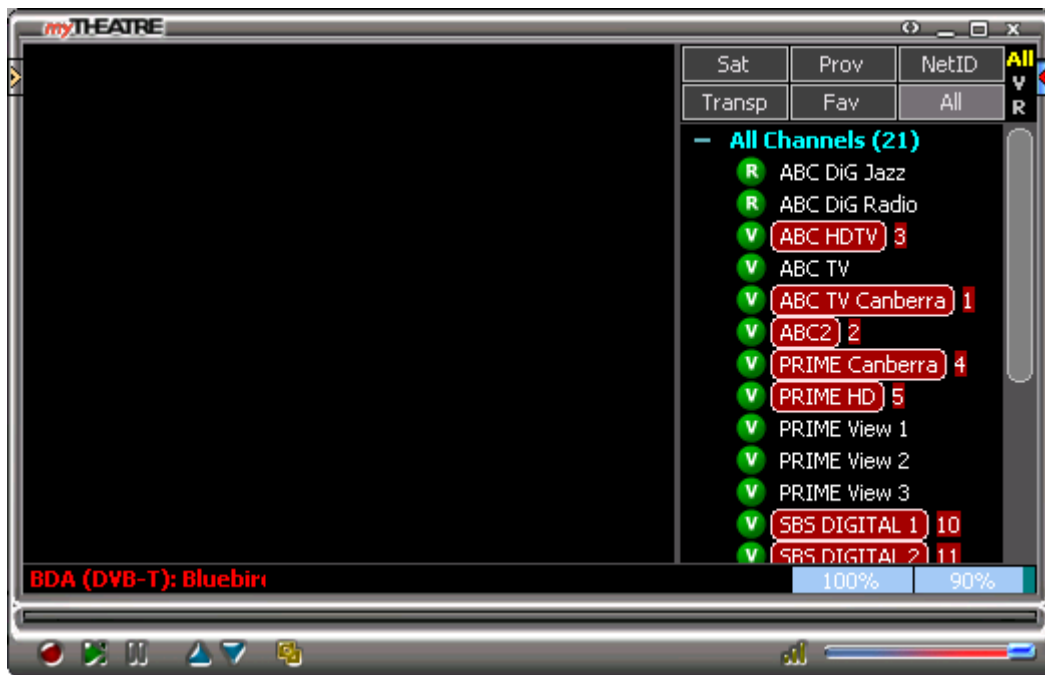


Click on Apply to return to the MyTheatre main Window.

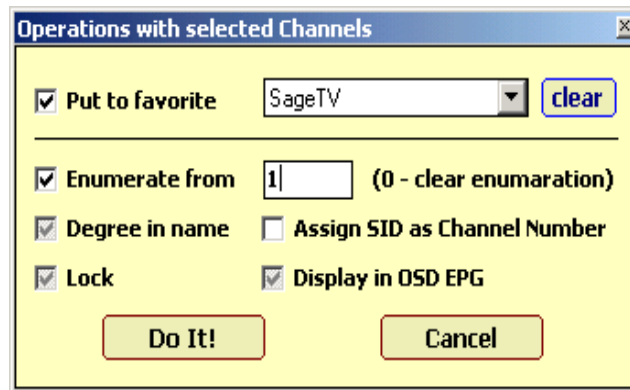
2. Add Channels to the New Favourite List

To add multiple channels to the new favourite list, perform the following procedure:

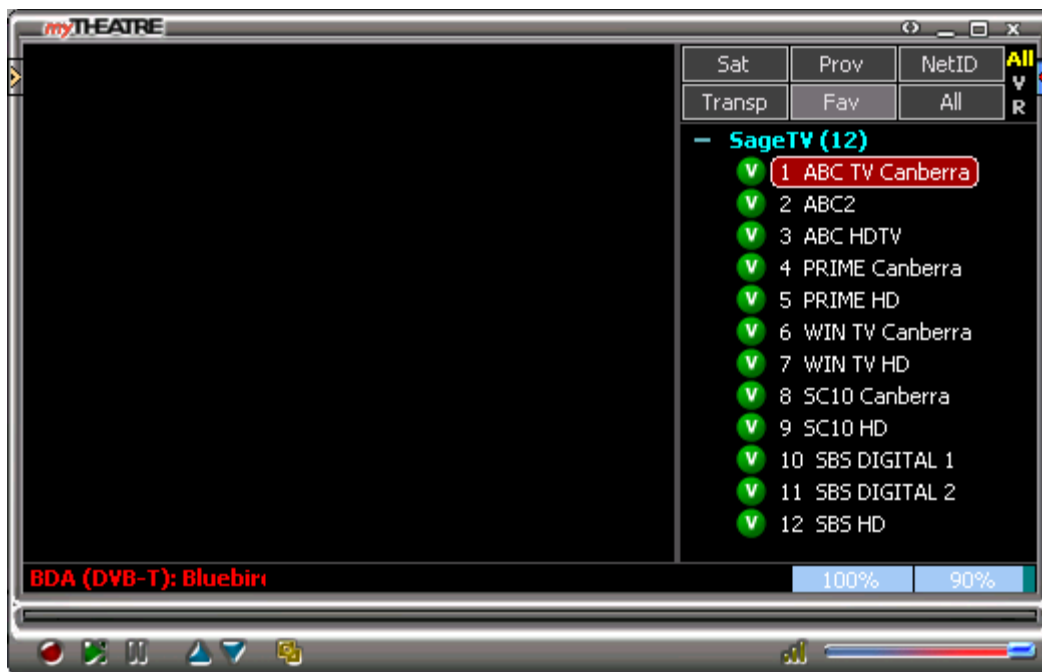
- Ctrl+Left Click on all the channels that you wish to add to the new favourite (Hint : Select them in the order that matches your desired channel lineup!). Your screen should now look something like that shown below:



- Now Right-Click on the selected group and choose 'Number & Favorite'. From the resulting window, select 'Put to Favorite' and choose the Favourite you created. Then select 'Enumerate from', specify 1 and click on 'Do It!'



Once this has been completed, you can switch to the Favourites view and should see a display similar to that shown below (Note: Repeat clicking on the Fav button should sort the list into channel number order). You can make further changes to the channel numbers, if required, by modifying the properties of an individual channel via Right-Click->Properties.



3. MyTheatre Setup Validation

As the function of the plugin (and SageTV) is reliant on the setup and configuration of MyTheatre. It is **ESSENTIAL** that you validate that your configuration is working correctly prior to activating the plugin. The MTSageTV plugin contains a diagnostic facility, but it only exercises the MyTheatre Plugin interface, not the actual functionality of MyTheatre itself.

To validate the set-up of MyTheatre, simply channel-surf and record a number of different channels/Transponders/Satellites and playback the resultant mpeg files to ensure that everything works as expected. Once you are happy with the results, you can use the MyTheatreSetupTest ini file option to test your configuration both under load and under the conditions it will be invoked via SageTV.

4. MyTheatre Setup for use in 'Headless' mode

When used in conjunction with the MTSageTV plugin, MyTheatre will be operating primarily in background mode – that is minimized to the System Tray. As a result, taking the following actions may reduce the resources required to run MyTheatre.

- Turn Off Video via Display->Video On/Off. Setting this to 'OFF' is essential when interacting with SageTV. Failure to do so will result in Video rendering problems when running SageTV.
- Turn Off EPG parsing via General Settings->EPG. Turning EPG parsing off will simply save CPU cycles – Why process what you don't use?
- Turn Off EPG & Channel Database Backup via General Settings->Miscellaneous. This will simply result in a faster MyTheatre startup – But ensure that you've backed up your Channels.mdb at least once before hand!
- Enable Multi-card (OFFLINE, CARDn) Support via General Settings->Miscellaneous. This will allow you to run multiple instances of MyTheatre against multiple DVB cards. See [\[HOW TO\] Use multiple tuners/cards](#) for further details.

MTSageTV Plugin Setup & Configuration

1. Installation

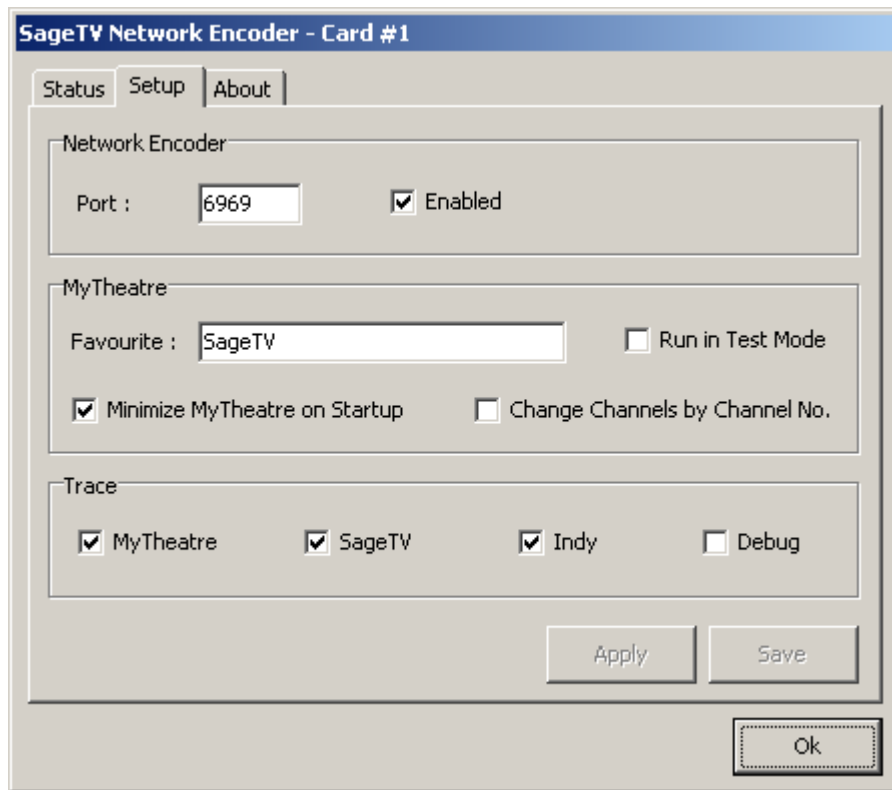
To install the Plugin, simply unzip the install files into the Plugins sub-directory of your MyTheatre installation. On successful installation, the directory structure should look like that shown below.

```
<MyTheatre Home>
  `-- Plugins
      |-- MTSageTV.dll
      `-- SageTV
          |-- Card1.ini
          |-- Doc
          | |-- MTSageTV – A SageTV Network Encoder for MyTheatre.pdf
          | `-- Version.txt
          |-- Logs
          | `-- Logs.txt
          `-- Video
              `-- Videos.txt
```

The Plugin directory contains the plugin, MTSageTV.dll, and a SageTV directory that contains the 'ini' file for each card to be used by the plugin, a sub-directory for log files, video capture and documentation.

2. Configuration

A GUI facility has been added to this version of the plugin to allow dynamic configuration changes. The Plugin can be configured by using Shift-CtrlAlt-S and choosing the Setup Tab. **Note:** This capability is still somewhat experimental, so it may not work as advertised. If in doubt, simply shutdown MyTheatre and edit the Card#.ini file as per the previous version.



Any changes to the GUI settings must be saved before they can be applied. The GUI settings & ini file parameters and their possible values are outlined below.

- **Port**
The TCP/IP Port that the Network Encoder listens on for Commands from SageTV. Each instance of the Plugin must have it's own unique Port.
- **Enabled**
Indicates whether the Plugin is Enabled. Valid values are 0 – Disabled, 1- Enabled. The Plugin is disabled by default on installation
- **MyTheatreFavourite**
MyTheatre Favourite that contains the channels for SageTV
- **MyTheatreMinimize**
Used to minimize MyTheatre on startup. Valid values are 0 – Disable (Default), 1 - Enable

- **MyTheatreUseChannelNo**
Channel change requests can be done by Channel No, rather than by MyTheatre internal Channel ID. Valid values are 0 – Disable (Default), 1 -Enable
- **MyTheatreSetupTest**
Used to Test the Plugin Interface to MyTheatre. Valid values are 0 – Disable (Default), 1 - Enable. When enabled the plugin will loop through the channels defined in MyTheatreFavourite every 10 seconds and record them to the Videos sub-directory.
- **MyTheatreTrace**
Used to trace MyTheatre Commands sent to the Plugin. Valid values are 0 – Disable (Default), 1 - Enable
- **SageTVTrace**
Used to trace SageTV Network Encoder Commands sent to the Plugin. Valid values are 0 – Disable (Default), 1 - Enable
- **IndyTrace**
Used to trace raw TCPIP Communication between the Plugin and SageTV. Valid values are 0 – Disable (Default), 1 - Enable . When enabled, requests will be written to a Card#_Indy.log file in the Logs sub-directory.
- **DebugTrace**
Used to provide a detailed trace of Plugin execution. Valid values are 0 – Disable (Default), 1 -Enable . When enabled, in addition to debug information, this option also enables the MyTheatre, SageTV and the Indy Trace.

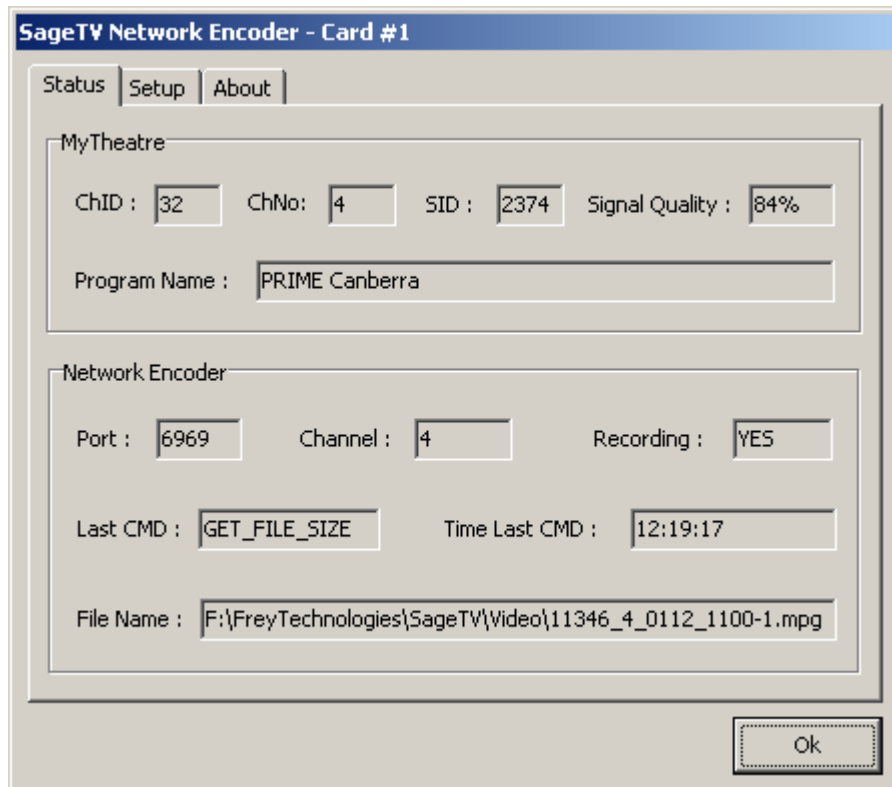
3. Multi-Card Support

Like MyTheatre, the plugin provides support for the use of multiple DVB Cards within the one machine. To facilitate this, each card has it's own unique plugin ini file to match the relevant MyTheatre CARDn profile.

By default, the first instance of MyTheatre & the plugin uses Card1.ini, the second Card2,.ini up to Card9.ini (which is the maximum number supported by MyTheatre). Log files generated by the plugin will incorporate the card in use in their name ie Card1.log, Card1_Indy.log, Card2.log, Card2_indy,log, etc.

4. Plugin Status

You can check the current status of the plugin by using Shift+Ctrl+Alt+S whilst MyTheatre is active. You should be presented with the window shown below.



This window provides detail of the current status for both MyTheatre and the plugin.

1 SageTV Setup & Configuration

1. Configure the Video Directories

Firstly, open Sage and ensure that all the Video directories point to a path that both Sage and MyTheatre can access. If SageTV and MyTheatre are installed on the same machine, this should not be a problem. However, If you have setup SageTV and MyTheatre on different computers you must specify a UNC path (\\computername\share) for the Video directories and ensure that both machines can access the relevant paths.

2. Define a Network Encoder

Shut down SageTV, both the client and disable/shutdown the service. Open your sage.properties file and find the last line beginning with “mmc/encoders/.....”. To define the Network Encoder, insert the following lines:

```
mmc/encoders/12345/1/0/atsc_tuning=false
mmc/encoders/12345/1/0/available_channels=
mmc/encoders/12345/1/0/brightness=-1
mmc/encoders/12345/1/0/cable_based_rf=true
mmc/encoders/12345/1/0/contrast=-1
mmc/encoders/12345/1/0/device_name=
mmc/encoders/12345/1/0/hue=-1
mmc/encoders/12345/1/0/last_channel=
mmc/encoders/12345/1/0/provider_id=11
mmc/encoders/12345/1/0/saturation=-1
mmc/encoders/12345/1/0/sharpness=-1
mmc/encoders/12345/1/0/video_crossbar_index=0
mmc/encoders/12345/1/0/video_crossbar_type=1
mmc/encoders/12345/2/0/atsc_tuning=false
mmc/encoders/12345/2/0/available_channels=
mmc/encoders/12345/2/0/brightness=-1
mmc/encoders/12345/2/0/cable_based_rf=true
mmc/encoders/12345/2/0/contrast=-1
mmc/encoders/12345/2/0/device_name=
mmc/encoders/12345/2/0/hue=-1
mmc/encoders/12345/2/0/last_channel=
mmc/encoders/12345/2/0/provider_id=0
mmc/encoders/12345/2/0/saturation=-1
mmc/encoders/12345/2/0/sharpness=-1
mmc/encoders/12345/2/0/video_crossbar_index=0
mmc/encoders/12345/2/0/video_crossbar_type=2
mmc/encoders/12345/2/1/atsc_tuning=false
mmc/encoders/12345/2/1/available_channels=
mmc/encoders/12345/2/1/brightness=-1
mmc/encoders/12345/2/1/cable_based_rf=true
mmc/encoders/12345/2/1/contrast=-1
mmc/encoders/12345/2/1/device_name=
mmc/encoders/12345/2/1/hue=-1
mmc/encoders/12345/2/1/last_channel=
mmc/encoders/12345/2/1/provider_id=0
mmc/encoders/12345/2/1/saturation=-1
mmc/encoders/12345/2/1/sharpness=-1
mmc/encoders/12345/2/1/video_crossbar_index=1
mmc/encoders/12345/2/1/video_crossbar_type=2
```

```
mmc/encoders/12345/3/0/atsc_tuning=false
mmc/encoders/12345/3/0/available_channels=
mmc/encoders/12345/3/0/brightness=-1
mmc/encoders/12345/3/0/cable_based_rf=true
mmc/encoders/12345/3/0/contrast=-1
mmc/encoders/12345/3/0/device_name=
mmc/encoders/12345/3/0/hue=-1
mmc/encoders/12345/3/0/last_channel=
mmc/encoders/12345/3/0/provider_id=0
mmc/encoders/12345/3/0/saturation=-1
mmc/encoders/12345/3/0/sharpness=-1
mmc/encoders/12345/3/0/video_crossbar_index=0
mmc/encoders/12345/3/0/video_crossbar_type=3
mmc/encoders/12345/audio_capture_device_name=
mmc/encoders/12345/audio_capture_device_num=0
mmc/encoders/12345/capture_config=2058
mmc/encoders/12345/encoder_merit=0
mmc/encoders/12345/default_device_quality=
mmc/encoders/12345/encoding_host=127.0.0.1\:6969
mmc/encoders/12345/encoding_host_login_md5=
mmc/encoders/12345/last_cross_index=0
mmc/encoders/12345/last_cross_type=1
mmc/encoders/12345/never_stop_encoding=false
mmc/encoders/12345/video_capture_device_name=MTSageTV Card 1
mmc/encoders/12345/video_capture_device_num=0
mmc/encoders/12345/video_compressor=
mmc/encoders/12345/video_encoding_params=
```

You will also need to customize the `encoding_host` parameter to match your installation setup:

```
mmc/encoders/12345/encoding_host=###.###.###.###\:6969
```

When MyTheater is installed on the local machine, you can replace `###.###.###.###` with "localhost" or 127.0.0.1 for the host. If you have installed MyTheatre on a remote client machine, you will need to specify the IP address for that machine for the host. The port parameter must match what has been specified in the plugin ini file - 6969 is the default.

3. Modify additional SageTV Properties

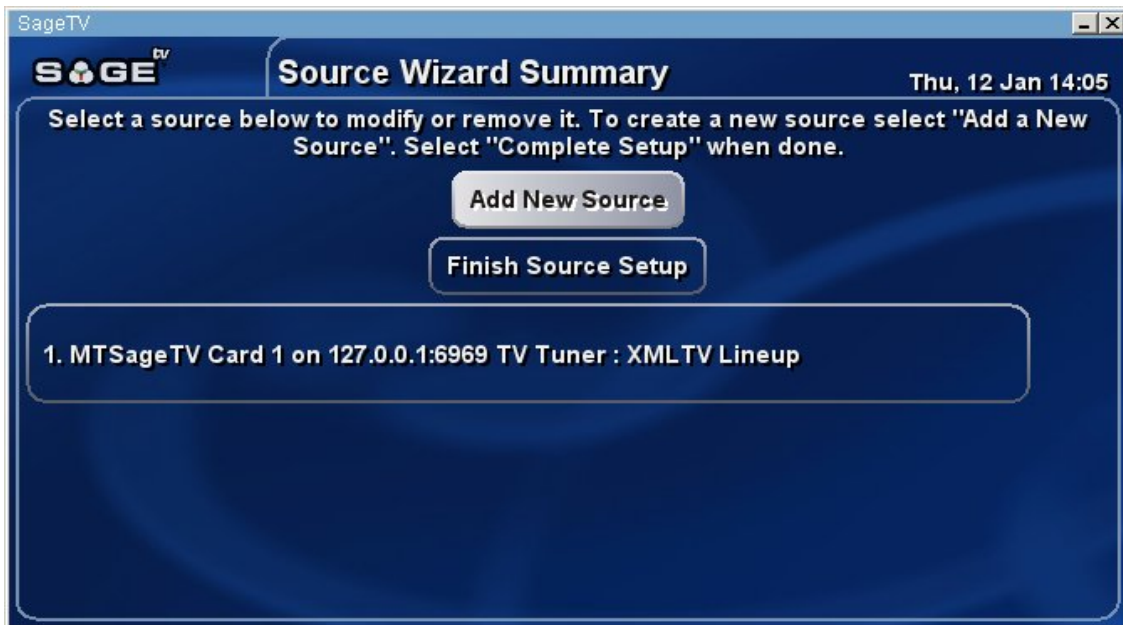
If SageTV is active, Shut down SageTV, both the client and disable/shutdown the service. Now open your `sage.properties` file and modify the following entries

- Change `seeker/fast_mux_switch=true` to `false`
- Change `videoframe/network_encoding_to_playback_delay=3500` to `1500`

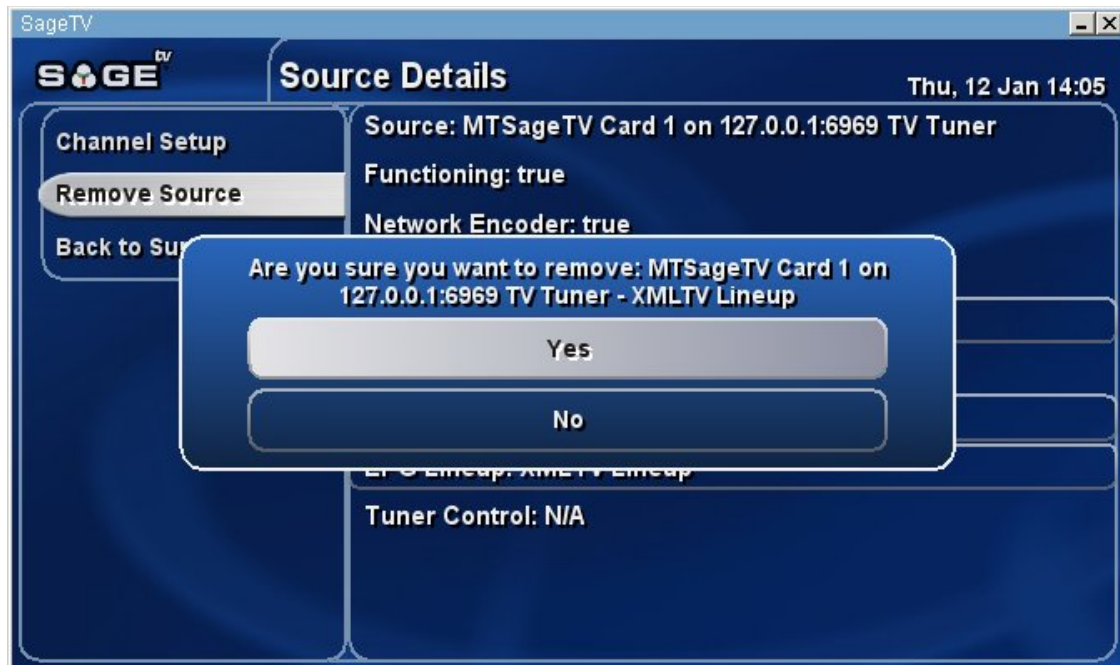
These changes affect the way that SageTV interacts with the Network Encoder. The first change appears to ensure that no channel change requests from SageTV to MT via the plugin are lost. The second change tells SageTV to make more frequent `GET_FILE_SIZE` requests to the plugin. This can result in the appearance of faster channel changes - Your mileage may of course vary!

4. Install the Network Encoder and Customize the Channel Lineup

Now start SageTV, go to "Setup" and choose the "Setup Video Sources". You should now see an entry for "MTSageTV Card 1" as shown below.



Now highlight this entry and click on it. Now Choose to remove the source as shown below.



Now Click on Finish Source Setup and Shutdown/ Restart SageTV. The reason for the initial removal of the source is based on problems encountered with the setup of the EPG & Channel lineup I have previously encountered.

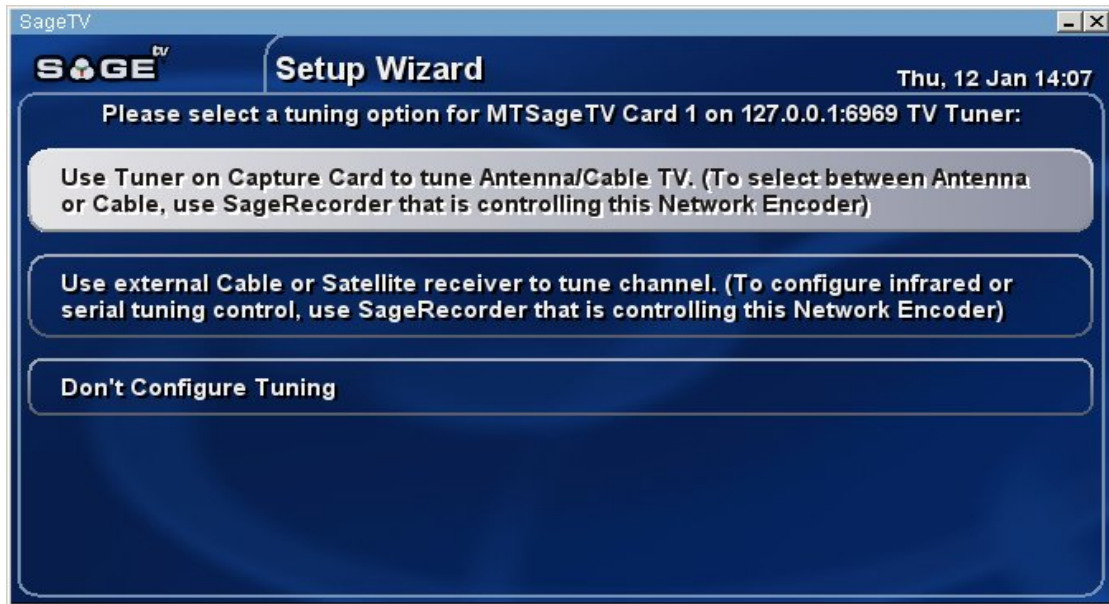
After restarting SageTV the Setup Wizard will kick in. From this screen, choose the specific Network Encoder to install as your input source.



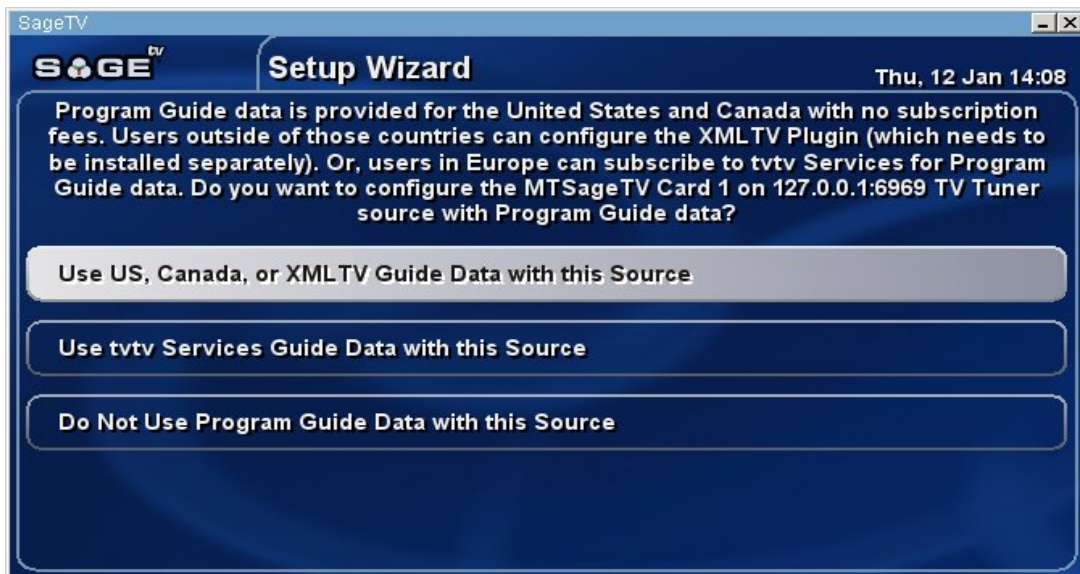
Select Tuner as the Input on the Device we are going to use for the Network Encoder.



Indicate that we will be using the Tuner on our Network Encoder to tune the relevant TV/Cable channels.



SageTV now needs to know the source of our Guide data for the network encoder. In my case the source is XMLTV.



To finalize the configuration of the EPG lineup, SageTV now wants to know what type of broadcast you will be receiving via the network encoder. For the XMLTV plugin I use, I am retrieving a Local Broadcast (OTA) and I'm using the lineup provided by my XMLTV feed, IceTV.

Once SageTV has retrieved your channel lineup, you can now customize it to match the lineup which you specified when you configured MyTheatre. This may require renumbering channels, disabling channels or adding channels. When you have completed this, click on Done with Channel Setup.



Now when you go to the Program Guide, you should hopefully see something akin to the screen below.

