Setting up LiveTV, TVGuide and TVTimer of the NMM Multimedia-Box

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This document describes the setup of the MMBox, especially LiveTV using Haupauge WinTV PVR 350 and DVB-Cards, the TVGuide (Electronic Programming Guide - EPG) and the Video-recorder, called TVTimer.

1. Setting up LiveTV in the MMBox

The MMBox supports LiveTV using different sources. These sources can be a Haupauge WinTV PVR 350 using the ivtv-driver (http://ivtv.sourceforge.net/) or a DVB-Card supported by the linuxtv-driver (www.linuxtv.org). Note, that the linuxtv-drivers are already integrated into Linux-Kernel >= 2.6.0.

1.1. Configure the TVCards

To setup the use of the Haupauge WinTV PVR 350, follow these steps:

- download and install xawtv from http://linux.bytesex.org/xawtv/
- if xawtv is installed, execute `scantv` with correct parameters (see manpage), eg.
  `scantv -c /dev/video0 -o ivtv.conf`
  (for correct channel-assignment ask your local cable provider or refer to the Internet.)
- copy the generated or manually created file to <nmmdir>/resources/ivtv

To use DVB, follow these steps:

- edit the channels.conf-file in <nmmdir>/resources/dvb by adding/removing wanted/unwanted channels. The syntax of the `channels.conf`-file is described at the linuxtv.org-Homepage (http://www.linuxtv.org/vdrwiki/index.php/Syntax_of_channels.conf)

1.2. Edit the MMBox-Configuration-File

To use these cards in the MMBox edit the MMBox-Configuration-File (.mmboxrc). First specify the number of TVCards you want to use by setting the `tvhosts_number`-variable.

```
tvhosts_number = 1
```

After that you have to specify a GraphURL for each host. See the Clic-Documentation for details about GraphURLs. E.g. to use a DVB-card located in your local PC you have to set

```
tvhost_0=dvbtv://localhost
```

Also you are able to use TVCards that are located in remote computers. In order to use these, a `serverregistry` must be running on the remote machine (`serverregistry` is located in <nmmdir>/apps/registry). E.g. the value of `tvhost` containing a remote IVTVCard must look like this:

```
ivtv://<remote-computer-name>:<port>
```

1.3. Create the global channel-configuration-file

After editing the mmboxrc, you have to create a global channels-file. It contains information about which channel is available on which TVCard. By default it is located in $HOME/.nmm/tv_channels.xml. To

create this file execute the tool

```
channelReader
```

which is located in <nmmdir>/apps/mmbox. If your MMBox-Configuration-File is not located at the default place, you have to specify the location by calling the `channelReader` with the '-c'-option.

```
channelReader -c <location of your mmboxrc>
```

To store the global channels-file somewhere else, call `channelReader` with -f

```
channelReader -f <some path>/<filename>
```

In this case you also have to tell the mmbox where to find the global channels-file by updating the variables `tvChannelFile`, `recorderChannelFile` and `dvbepgChannelFile` (if you want to use DVB-EPG) accordingly.

WARNING: Whenever you change, remove or edit one of the `tvhost`-variables you have to call `channelReader` again.

2. Setting up a Videorecorder as a Service

You can run the Videorecorder as a daemon on any host by using the `vcrserver`-tool. To connect to this tool with your MMBox edit the `tvtimerLocation`-variable in your .mmboxrc.

```
tvtimerLocation=<host>:<port>
```

The `vcrserver` continues running and records shows event if your MMBox is not running. To use this tool you need a valid `tv_channels.xml`-file. To create such a file read the Section about setting up LiveTV. In order to start `vcrserver` you have to specify a directory where to store the recordings. The directory can be specified by using the -d-option

```
vcrserver -d <full-directory-path>
```

3. Setting up TVGuide - Basic Functionality

The MMBox collects information using external tools or DVB. As external tools the MMBox supports collecting data with XMLTV-tools (http://membled.com/work/apps/xmltv/) or Nxtvepg (http://nxtvepg.sourceforge.net/). To setup the tool of your choice, please read the documentation of the tool for correct configuration. This document assumes, that the tools are properly installed and configured. Make sure, that the binaries are contained in your PATH-environment-variable.

- Download and install the XMLTV-tools (http://membled.com/work/apps/xmltv/) or Nxtvepg (http://nxtvepg.sourceforge.net/). To use DVB-EPG you don't need to download extra software.
- edit variables in .mmboxrc (MMBox-Configuration-File) as follows

  The TVGuide supports collecting information from different sources simultanously. To use multiple sources specify how many sources you want to use by setting the `epgsources_number`-variable. Then you can set the different sources by setting the `epgsource_x`-variables where `x` is a number from 0 to `epgsources_number`-1.

  ```
  epgsources_number=2
  epgsource_0=xmltv
  epgsource_1=DVB
  ```

  Possible values for `epgsource_x` are:

  - DVB - if you use DVB as LiveTV-Source, you can use the EPG-information provided in the DVB-stream
  - xmltv - use a grabber from XMLTV-Package
  - nxtvepg - tool to collect schedule-information using bttv-TVCards. Nxtvepg must be running in daemon-mode in order to collect data.

- To configure the epgsources the following variables are available:

  xmltv_language

  : select a xmltv-grabber by specifying a country-shortcut (eg 'de' for Germany)

  xmltv_period

  : specify, how often the update of the xmltv-information should be startetd. E.g. d1 means every day

  nxtvepg_dbdir

  : specify the path to the nxtvepg-database (/usr/tmp/nxtvdb by default)

  nxtvepg_provider

  : specify the hexadecimal-code of the provider delivering the programme-information. See nxtvepg-documentation for details

  nxtvepg_period

  : specify how often the nxtvepg-information should be started

  dvbepgChannelFile

  : Set an `tv_channels.xml` if the one that shold be used is different from default. To create such a file read the Section about setting up LiveTV.

If you are using XMLTV and missing the support for the grabber for your country, make sure, that it is specified in the file <nmmdir>/resources/tvguide/XMLTVPluginConf.xml

4. Setup of a distributed TVGuide

Using a distributed TVGuide you can access TVGuide-Services running on remote hosts to either fill your locally stored information or just use the remote information. To setup such a scenario you can use the small program `tvgserver` or multiple MMBoxes.

The `tvgserver`-tool is a commandline-tool which collect EPG-Information using the specified source and stores them into a directory. By default, `tvgserver` creates the subdirectory `epg` in your current directory. You can specify an alternate directory with -d

```
tvgserver -d <full-path-of-directory>
```

As source can be used XMLTV, Nxtvepg or DVB.

To use XMLTV as source, start `tvgserver` with -x. The default grabber is that for Germany. To select another one, specify it by adding the option `-l <grabber>`.

```
tvgserver -x -l de
```

To use Nxtvepg, start `tvgserver` with option -n. This assumes a running nxtvepg-daemon.

```
tvgserver -n
```

To use DVB-EPG, start `tvgserver` with option -b. To use DVB, you need a valid `tv_channels.xml`-file. To create such a file read the Section about setting up LiveTV.

```
tvgserver -b
```

To just use the remote TVGuide-information and not holding data locally, set the host in your .mmboxrc by editing the `epgLocation`-variable

```
epgLocation=<host>:<host>
```

One feature of the TVGuide is, that if it detects missing information, it automatically queries remote TVGuides for that information. To enable this feature add all hosts you want to access directly by specifying them as epgpeer's in your .mmboxrc and set the `epgpeers_number`-variable to the number of the hosts specified. Note, that on each host must be a running `tvgserver`

```
epgpeers_number=2
epgpeer=<hostA>:<port>
epgpeer=<hostB>:<port>
```

Example-Scenario: This example describes a Scenario where you query a tvgserver as peer to update your locally stored information. The remote tvgserver collects its information using xmltv and is running on host `remotehost`. To do so, login to `remoteHost` and execute tvgserver

```
tvgserver -x
```

Edit your .mmboxrc by adding this host as epgpeer

```
epgpeer_0=remoteHost
```

Then start your MMBox

```
mmbox
```

HINT: Even your MMBox can serve as epgpeer or epglocation. Start the first MMBox with the -p-option and specify a port, where the MMBox is listening on.

```
mmbox -p 12345
```

The .mmboxrc of your second MMBox then should contain the host-port-combination of the first MMBox either as epgpeer or epgLocation respectively.

```
epgLocation=firstHost:12345
```

or

```
epgpeers_number=1
epgpeer_0=firstMMBox:12345
```

5. Connecting TVGuide, LiveTV and Viderecorder

For some channels there exists differnt spellings of writing their names. E.g the german channel Pro-7 can be either written as ’Pro-7’ or ’Pro Sieben’. To make sure, that the LiveTV-State and the TVTimer-State of the MMBox finds the corresponding informations you have to specify aliases for such channels. To do so you have to edit the `channelAliases.xml`-file. This file resides in <nmmdir>/resources/tvguide. You have to write all names of a channel within the XML-channel-Tags.