



## Table of contents

1.	INTRODUCTION .....	2
2.	INSTALLATION .....	3
3.	CONFIGURING THIS PACKAGE.....	5
	GENERAL CONFIGURATION TAB .....	5
	EPG CONFIGURATION TAB .....	6
	FFMPEG SUPPORT TAB .....	8
	ADVANCED TAB .....	9
4.	USING THIS PACKAGE .....	10
	CHANNELS PAGE .....	10
	RECORDS PAGE .....	11
	EPG CHART PAGE.....	12
	EPG LIST PAGE .....	13
	LOG PAGE.....	13
	MOBILE VIEW.....	14
5.	FURTHER INFORMATION .....	15
	FFMPEG SUPPORT .....	15
	EPG IMPORT.....	17
6.	LICENSE AND DISCLAIMER .....	19
7.	EXTERNAL MODULES .....	20
8.	TROUBLESHOOTING .....	21
9.	MODIFYING THE PACKAGE .....	21
10.	CONTACT AND SUPPORT INFORMATION .....	21



### 1. Introduction

This package is designed to record plain<sup>1</sup> live streams from network streaming TV receiver and devices such as [Elgato Netstream](#), [Dreambox](#) or [Panasonic DMR-HCT130](#). If it's also your main profile, you may skip most of advanced settings. A simple use case would be a daily or weekly recording of your favorite news or shows<sup>2</sup>:

The screenshot shows the 'Records' tab of the tvstreamrecord interface. It includes a navigation bar with 'Records', 'Channels', 'EPG Chart', 'EPG List', 'Config', 'Log', and 'About'. Below the navigation bar, there are buttons for 'Create new record' and 'Purge old records'. A search bar is present with the text 'Show 10 entries' and a search input field. The main content is a table with the following data:

Record name	Channel	at	till	Recurrent	Controls
Daily news	<a href="#">News Channel</a>	12/12/2015 17:00	12/12/2015 17:30	MoTuWeThFrSa	<input type="text"/>
Sunday news	<a href="#">News Channel</a>	12/13/2015 18:00	12/13/2015 19:00	Su	<input type="text"/>

At the bottom, it says 'Showing 1 to 2 of 2 entries' and has navigation links: 'First', 'Previous', '1', 'Next', 'Last'.

Other unprotected stream protocols<sup>3</sup>, which you can play with your favorite media player, can also be recorded. These will be forwarded to an external package [ffmpeg](#) and may require advanced configuration. Streams can also be converted in another format on the fly using [ffmpeg](#). Please note, that it may cause massive performance problems with many older DiskStation models. See the [corresponding section](#) of this manual for more information.

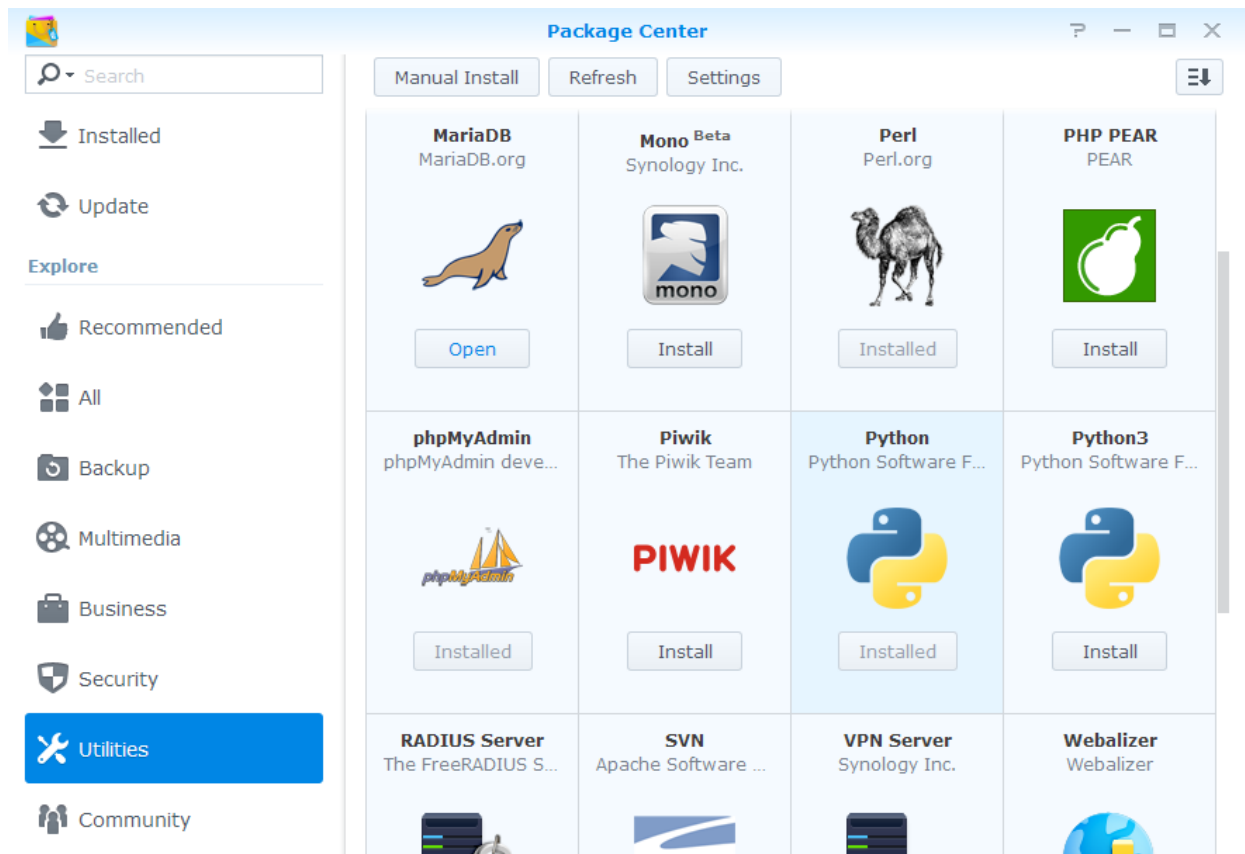
<sup>1</sup> Plain streams are unprotected http streams such as <http://address/streamname>

<sup>2</sup> Embedded screenshots are mostly based on DSM 5.2-5644 Update 2 and tvstreamrecord 1.2.1

<sup>3</sup> With the on Synology systems with Media Station preinstalled version of ffmpeg following input protocols are additionally supported: ftp, gopher, hls, http, httpproxy, mmsh, mmst, rtmp, rtmpt, rtp, srtp, tcp, udp and more

## 2. Installation

This package requires [Python](#) or [Python3](#), which must be installed separately through your **Package Center**. Please open your **Package Center**, navigate to the **Utilities** tab, select any **Python** version and click **Install**. Python must not be started and will also create no icon in your Main Menu as it runs on demand only. You've done it, if it looks like this:



In order to install this package please click on **Settings** button in your **Package Center**, navigate to the **Package Sources** tab and click the **Add** button. Please add our community package hub [www.cphub.net](http://www.cphub.net) as shown below (name may vary):

**Add**

Name:

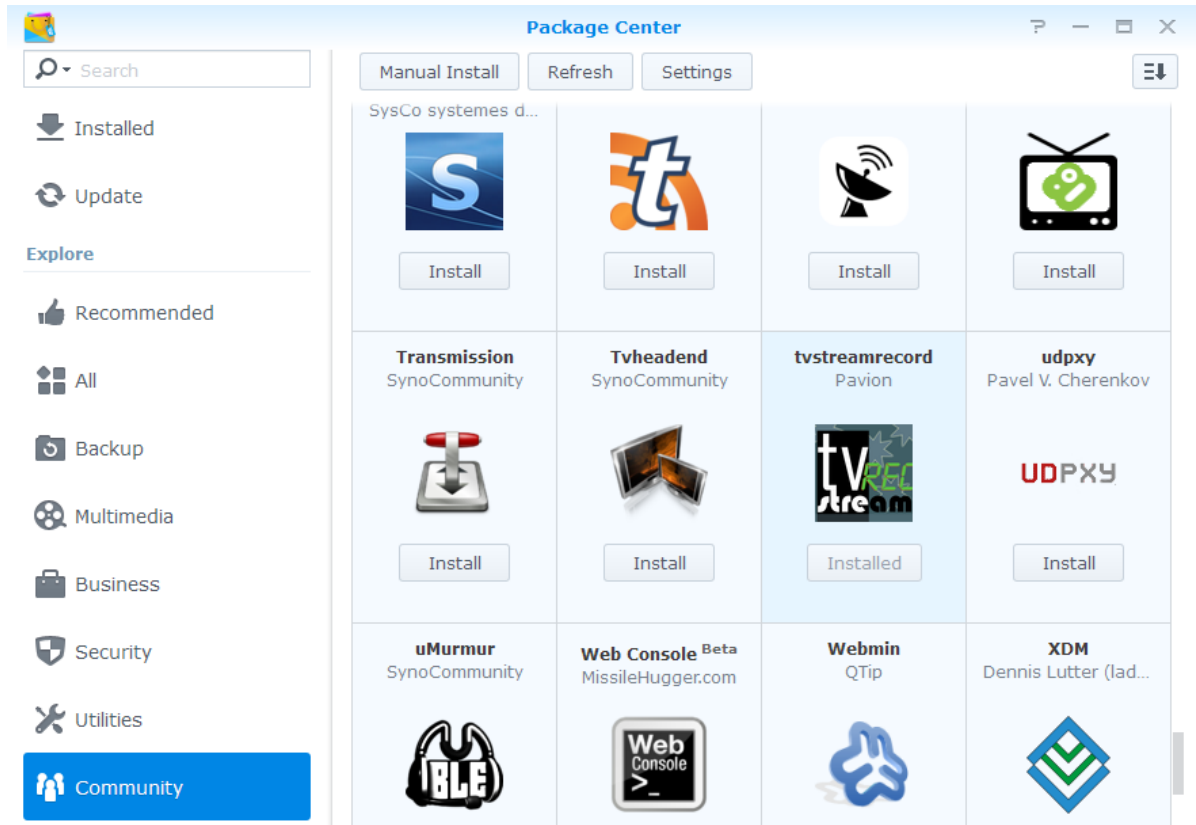
Location:

OK

Cancel



Click **OK** to close this window and the one below and click **Refresh** button in your **Package Center**. After a short refresh time you will see a **Community** tab. Click it and scroll down to find the package **tvstreamrecord** as shown below. Click **Install**.



Please start the package if it's not running. You should now see a corresponding icon in your **Main Menu**. Click it and you are ready to move on and start configuring the package. Please note, that you can also bookmark any package page to have a quick access to it.



### 3. Configuring this package

#### General configuration tab

This section covers the general configuration, which is enough to start recording plain streams. Please open the package's web interface and navigate to the **Config** page. You are now seeing some general options you should consider. Press **Submit changes** to accept or reload this page to undo all changes.

Configuration: [Submit changes](#)

General	EPG	FFMPEG support	Advanced
---------	-----	----------------	----------

Parameter name	Value
Path for your recordings	<input type="text" value="/volume1/common/"/> <a href="#">Browse</a>
File extension for the recorded stream (default='.ts')	<input type="text" value=".ts"/>
Interface theme (default='smoothness')	<input type="text" value="smoothness"/>
Interface language (default='english')	<input type="text" value="english"/>
Date/time locale (default='default')	<input type="text" value="default"/>
Set remote access password (leave blank for none)	<a href="#">Set password</a>

**Path for your recordings** is a vital setting and should be set. You can use any shared folder, which can be accessed with the root user (e.g. /volume1/common/). You can type your desired path in the corresponding box or use the **Browse** button to select one from the list.

**File extension for the recorded stream** will be added as a suffix to the filename. In a basic configuration this parameter doesn't affect anything beside filename itself.

**Interface theme** specifies the theme for the web interface to be used. Please select your favorite look and feel from the provided list.

**Interface language.** As of now, three languages are supported (English, German and Russian).

**Interface locale** adds local date/time support for several countries. Please select your desired locale or the default one.

**Set remote access password** can be used to provide an access password for from outside your local network. Local connections don't require a password. **Warning: entering wrong password three times will block your current IP for at least 48 hours.** To disable a password query again just type nothing in the corresponding fields. Please note that you might need to forward the package port (default: TCP/8030) in your router/firewall configuration. See its respective manual for more details.

## EPG configuration tab

This section hosts all settings regarding an **Electronic Program Guide (EPG)**. If you don't have an EPG content provider and your streams don't transport any EPG information, you can't use this feature and also don't need to setup anything at this page.

Configuration: [Submit changes](#)

Parameter name	Value
Lengthen an EPG-record (delta before and after), [minutes]	<input type="text" value="3"/>
Enable XMLTV import	<input checked="" type="checkbox"/>
Initial path for an XMLTV import	<input type="text" value="http://xmltv.spaetfruehstuecken.org/xmltv/datalist.xml.gz"/>
Time shift for XMLTV data (in hours)	<input type="text" value="0"/>
mc2xml full command line (x86 CPUs only, default: empty) *	<input type="text"/>
Enable stream scan/grab **	<input checked="" type="checkbox"/>
Maximal EPG scan duration per channel, [seconds] (default: '60') **	<input type="text" value="60"/>
Time to perform daily EPG/XMLTV grab (hh:mm format, 24h based, default '0' for manual only)	<input type="text" value="0"/>
EPG list mode. Disable for client-side processing (more network load), enable for server-side processing (more server load)	<input checked="" type="checkbox"/>
Client-side only: maximal number of events to request from server (earlier first), solves some performance issues	<input type="text" value="5000"/>
Delete/reset all EPG data	<a href="#">Delete</a>

\* For more information about installing and configuring mc2xml please visit its homepage at: [mc2xml.hosterbox.net](http://mc2xml.hosterbox.net)  
 \*\* Deprecated and will be removed in a future version

**Lengthen an EPG record** will be used to prolong the record and avoid any small time shifts in TV charts. Please note that your system time will be used for recording and should be exact.

**Enable XMLTV import** for manual import or to be performed once per day at specified time.

**Initial path for an XMLTV-Import** can be used to import EPG (electronic program guide) from free XMLTV-compatible pages. Please read the [corresponding section](#) for more information.

**Time shift for XMLTV data** can be used to shift all imported EPG data by some hours (positive or negative value). That can be useful if importing EPG data from another time zone.

**mc2xml full command line** is for using a third party tool [mc2xml](#). Please consult its [page](#) for more information regarding installation and configuration of this tool. If properly configured, corresponding output should be redirected into a local file, which is to be specified under **Initial path for an XMLTV-Import**. Please read the [corresponding section](#) for more information.

**Enable stream scan/grab** for manual import or to be performed once per day at specified time. Please note that this method is deprecated and may be removed in a future version.

**Maximal EPG scan duration per channel in seconds.** Some channels resend all their EPG information each minute; some channels have much longer cycles. Increasing duration can result in receiving more guide information.



**Time to perform daily EPG/XMLTV grab** can be used to automatically refresh your EPG guide using your streams and/or your XMLTV provider. Please read the [corresponding sections](#) for more details.

**EPG list mode.** Disabled for classic client side processing with greater network load, enabled for server side processing with greater server load but lesser traffic. Using client side processing you can reduce a **maximal number of events to request** to reduce your network throughput and server load.

**Delete/reset all EPG data** can be used to clear your database in case of EPG issues



## FFMPEG support tab

This part offers a few settings regarding [ffmpeg](#) support. If your stream is a plain **http**, you don't need to read this section. For advanced information and some usage examples please check the [corresponding section](#) of this manual.

Configuration: [Submit changes](#)

General	EPG	FFMPEG support	Advanced
---------	-----	----------------	----------

Parameter name	Value
Stream types, which should be forwarded to ffmpeg (space separated)*	<input type="text" value="rtmp rtp rtsp"/>
Full path to ffmpeg for other streams support	<input type="text" value="ffmpeg"/>
Additional output arguments for ffmpeg (default: '-loglevel fatal -acodec copy -vcodec copy')**	<input type="text" value="-loglevel fatal -acodec copy -vcodec copy"/>
Enable proxy for ffmpeg	<input checked="" type="checkbox"/>
Proxy URL for ffmpeg	<input type="text" value="http://127.0.0.1:8080"/>

\* For more information regarding ffmpeg and its command line parameters please visit its homepage at: [ffmpeg.org](http://ffmpeg.org)

\*\* Valid placeholders: %date%, %title%, %year%, %month%, %day%, %channel%, %channelid%.

**Stream types to forward to [ffmpeg](#).** If your stream can be recorded with ffmpeg, you can add its prefix (or protocol) here. You can also add **http** to disable a basic functionality of this package and to enable processing of http streams on the fly.

**Full path to [ffmpeg](#)** is needed for supporting other streams than **http**. [ffmpeg](#) is not included with this software. On DiskStation [ffmpeg](#) is preinstalled with Video, Audio and Media Stations. In most cases leaving the default value should be enough. With some protocols other versions may need to be used. In this case please check the [corresponding section](#) of this manual.

**Additional output arguments for [ffmpeg](#)** can be used to change your output, to encode or to decode your stream on the fly or to display additional output information from ffmpeg.

**Enable proxy for [ffmpeg](#)** enables proxy processing using following **Proxy URL for [ffmpeg](#)**.





### Advanced tab

This section covers a few advanced settings, which shouldn't normally be changed.

Configuration: [Submit changes](#)

Parameter name	Value
Purge database records older than [days]	30
Server bind address (restart needed)	0.0.0.0
Server port (restart needed)	8030
Record name/path mask (default: '%date% - %title%')*	%date% - %title%
Reset the log file	<a href="#">Reset log</a>
Retry count for failed records	99
Enable postprocessing	<input checked="" type="checkbox"/>
Postprocessing command (use %file% for full filename)	synoindex -a %file%

\* Valid placeholders: %date%, %title%, %year%, %month%, %day%, %channel%, %channelid%.

**Purge database records** is used to automatically delete old EPG and records information after some time supplied

**Server bind address.** Default 0.0.0.0 will make your server available from any local address. Any other choices (e.g. 127.0.0.1) may be used to limit the access. Changing this setting requires package restart (stop and start using **Package Center**).

**Server port** is the port the server runs on. Changing it also requires package restart<sup>4</sup>.

**Record name/path mask** is used to name resulting files according to placeholders. It can also be used to create subfolders (for example: %channelid%/ %date%- %title%). Following placeholders are supported:

- **%date%:** classical time stamp placeholder YYYYMMDDHHMMSS
- **%title%:** record title placeholder
- **%year%, %month%, %day%:** separate year, month and day placeholders YYYY, MM, DD
- **%channelid%:** channel ID placeholder

**Reset log** should be used to clear your log file if it's becoming too big or on output issues.

**Retry count for failed records** will retry failed records **X** times, useful on unstable connections.

**Enable postprocessing and its command** can be enabled and used for advanced video/audio postprocessing or for indexing the resulting file. Default value will index the new file for using with Synology Video/Media Station. Placeholder %file% for full filename.

<sup>4</sup> Using a wrong port or bind address may cause the package server to fail. In this case a default server will be started on 0.0.0.0:8030, which will allow you to edit the configuration. You can also reinstall the package to reset everything.

## Channels page

The **Controls** column shows (left to right): a switch for enabling or disabling a particular channel, a play icon to create a record with this channel and a gear icon to edit or delete this channel.

As for now you have two ways to add channels. You can normally add a channel by providing its ID, name, URL and file extension or you can import a .m3u playlist provided within your device as long as it has following syntax:

```
http://10.0.0.1/stream/tunerequest0000000000000000000000000000000000000000000000000
```

Page 10 of 21



**Please note, that adding a new playlist without appending will erase all old channels and records as well, due to the possibility of ID conflict!**

You can add a file extension while creating new channels. If you are using http streams, file extension will be simply added at the end of the file name. If you are using [ffmpeg](#), file extension may be crucial for determining your output type. While importing from .m3u you can't specify any file extension. In case of empty extension the default one from configuration will be used automatically.

Once added, you can edit and move your channels. To do this, please click on the gear symbol at the right of the table row. You're now able to edit the channel information as well as to assign a new ID. Using an existing ID will insert the current record before this ID and re-enumerate the others. You can also delete your channel from here. Please note, that deleting a channel will also delete all associated records.

## Records page

Here you can schedule your records, turn them on and off, edit or delete them. You can also schedule recurrent records if weekdays are provided. Unlike 'normal' records, which are done after completion, the next runtime will be automatically calculated and set here.

The **Controls** column shows (left to right): a progress bar for running records, a switch for enabling or disabling a particular record and a gear icon to edit or delete the record.

Records
Channels
EPG Chart
EPG List
Config
Log
About

**Records:** [Create new record](#) [Purge old records](#)

Show 10 entries Search:

Record name	Channel	at	till	Recurrent	Controls
Daily news	<a href="#">News Channel</a>	12/12/2015 17:00	12/12/2015 17:30	MoTuWeThFrSa	<input type="text"/>
Sunday news	<a href="#">News Channel</a>	12/13/2015 18:00	12/13/2015 19:00	Su	<input type="text"/>

Showing 1 to 2 of 2 entries First Previous 1 Next Last

Create new record

×

Name

Channel

Start date

Start/end time

Recurrent records

☐ Su
 ☐ Mo
 ☐ Tu
 ☐ We
 ☐ Th
 ☐ Fr
 ☐ Sa

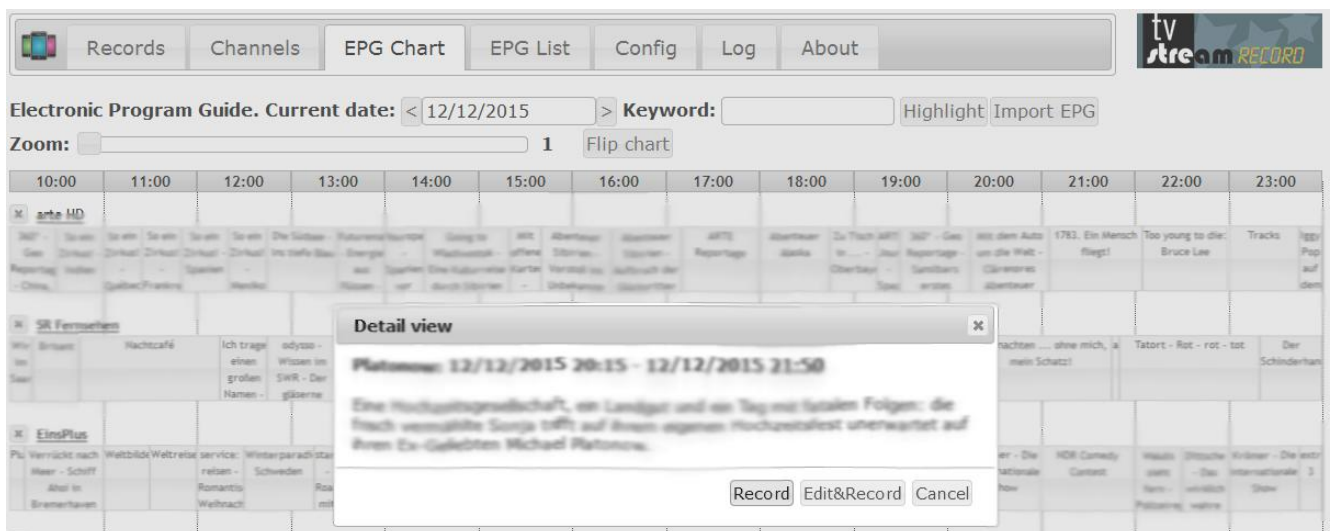
Create

Cancel

### EPG chart page

If available, your **Electronic Program Guide (EPG)** is presented here in a chart form for a current or a selected date. You can disable a channel by clicking on an **X** icon next to its name. You can **highlight** events with specified keyword. You can also manually trigger **EPG import** from here (see the [corresponding section](#) of this manual for more information).

By clicking on an event you can either **Record** it, which will automatically create a record and redirect you to the Records tab, or you can **Edit&Record** your event, which will allow you to change record parameters and will not redirect you away.



Electronic Program Guide. Current date: < 12/12/2015 > Keyword: Highlight Import EPG

Zoom: 1 Flip chart

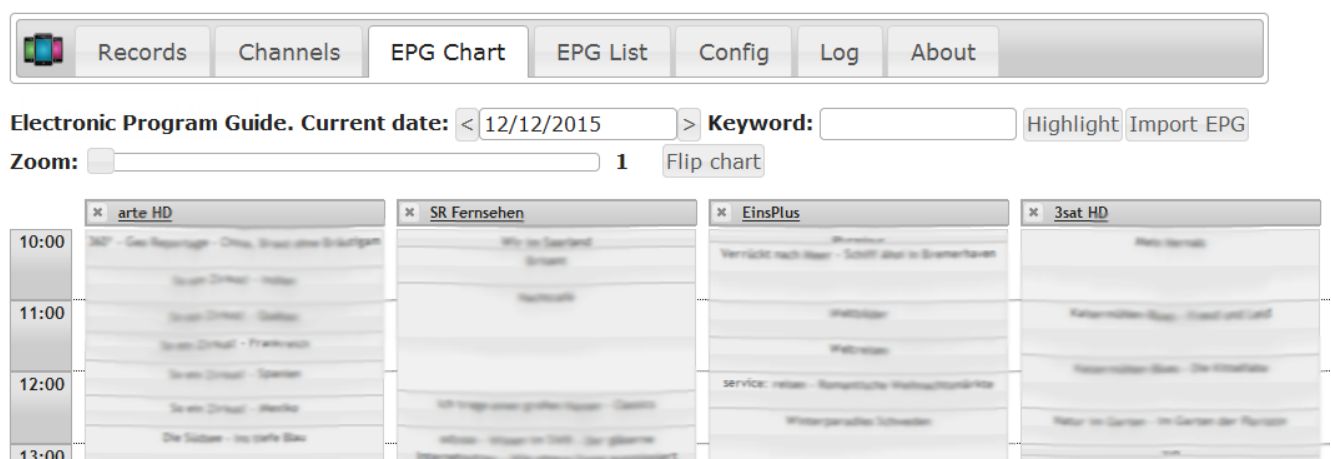
**Detail view**

**Platonow: 12/12/2015 20:15 - 12/12/2015 21:50**

Eine Hochkulturgesellschaft, ein Landgut und ein Tag mit sozialen Folgen: die frisch verheiratete Sonja trifft auf ihren eigenen Hochzeitsfest unterwartet auf ihren Ex-Geliebten Michael Platonow.

Record Edit&Record Cancel

You can also use the **zoom** slider to enlarge the view or **Flip chart** to switch to the vertical view:



Electronic Program Guide. Current date: < 12/12/2015 > Keyword: Highlight Import EPG

Zoom: 1 Flip chart

**arte HD**

10:00 30P - Geo Reportage - China, was aus der Zukunft

11:00 3sat Zirkus - India

12:00 3sat Zirkus - Frankreich

13:00 3sat Zirkus - Spanien

**SR Fernsehen**

10:00 3sat Zirkus - India

11:00 3sat Zirkus - Frankreich

12:00 3sat Zirkus - Spanien

13:00 3sat Zirkus - India

**EinsPlus**

10:00 3sat Zirkus - India

11:00 3sat Zirkus - Frankreich

12:00 3sat Zirkus - Spanien

13:00 3sat Zirkus - India

**3sat HD**

10:00 3sat Zirkus - India

11:00 3sat Zirkus - Frankreich

12:00 3sat Zirkus - Spanien

13:00 3sat Zirkus - India



### EPG list page

If available, your **Electronic Program Guide (EPG)** is presented here in a table form. You can search within this table and you can record your event directly as well. You can also manually trigger **EPG import** from here (see the [corresponding section](#) of this manual for more information).

Records
Channels
EPG Chart
**EPG List**
Config
Log
About

**Electronic Program Guide - list view** [Import EPG](#)

Show  entries Search:

Channel	Title	Description	Start time	End time	Record
S&P Fernsehen	Neuzeit	Gabe bei McHard Stadtschach	12/12/2015 10:45	12/12/2015 12:15	
S&P Fernsehen SW	Neuzeit	Gabe bei McHard Stadtschach	12/12/2015 10:45	12/12/2015 12:15	

You can also bookmark your favorite searches by adding search keyword to your current URL, for example:  
`127.0.0.1:8030/epglist&beach`  
 will always display events containing the keyword „beach“. Additional support for this feature may be added in future releases.

### Log page

Here you can see server side debug information. Please check this page if you encounter a behavior you can't explain. Please also consult the [corresponding section](#) of this manual.

Records
Channels
EPG Chart
EPG List
Config
**Log**
About

**Log:** [Download log](#)

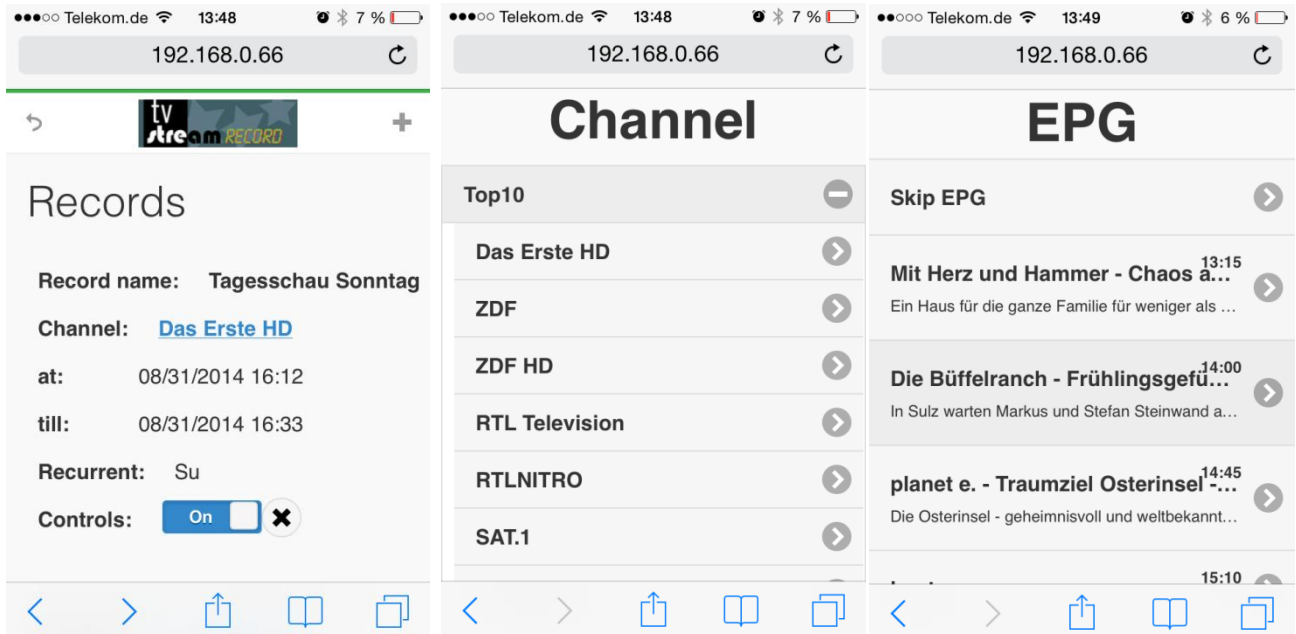
Show  entries Search:

Date/time	Logged text
2015-12-09 09:17:08.687	Starting tvstreamrecord v.1.1.4 with Python 2.7
2015-12-09 09:17:08.687	Logging output initialized
2015-12-09 09:17:08.703	Initializing database...



### Mobile view

This is a mobile version of your record page. Here you can access most of the features of the desktop version including recording from EPG (if available). You can also create a shortcut icon on the home screen of your mobile device.



You will be automatically redirected to this view from the page root if you are using a handheld device. You can also access this view with a corresponding icon in the top left corner of the desktop version menu. Please note, that you must have some channels created to make use of this view. For that please check the corresponding section of this manual.



## 5. Further information

### FFMPEG support

This section covers all issues with non-http streams, which still can be handled with the external software [ffmpeg](#). I ask to understand, that ffmpeg is neither part of this package nor can ffmpeg developers provide support for this package. This package simply provides a front end for this console based tool. **All the advanced settings in this section may also require advanced skills in dealing with console applications.**

Global rule is: if you can play your stream with your favorite media player, you can also try to record it with this feature. A default setting allows the handling of **rtmp**, **rtp**, **udp** and **rtmpt** streams. If you have a terminal access to your DS, you can do following steps in your DS console; otherwise you can also download and install an ffmpeg version for your local operation system (make sure you use a correct path though).

Following is a small tutorial for checking and adding your stream support (all console commands are bold):

Make sure, that you have ffmpeg properly installed by typing and running

```
> ffmpeg
```

from the console. You should see following output (only first line is displayed here):

```
/> ffmpeg  
ffmpeg version 2.0.2 Copyright (c) 2000-2013 the FFmpeg developers
```

Check your stream **foo://10.0.0.1:1000** with a following command:

```
> ffmpeg -i foo://10.0.0.1:1000 -t 30 -acodec copy -vcodec copy out.mpg
```

This tells ffmpeg to save your stream (**-i streamaddress**) for a duration of (**-t xx**) seconds by copying audio (**-acodec copy**) and video (**-vcodec copy**) into an output file (**out.mpg**).

If it works, you should see a lot of output text for the duration of 30 seconds and be able to locate the generated file in your current folder.

```
frame= 665 fps= 30 q=-1.0 size= 14634kB time=00:00:27.26 bitrate=4397.4kbits/s  
frame= 675 fps= 30 q=-1.0 size= 14890kB time=00:00:27.66 bitrate=4409.6kbits/s  
frame= 688 fps= 30 q=-1.0 size= 15262kB time=00:00:28.18 bitrate=4436.4kbits/s  
frame= 703 fps= 30 q=-1.0 size= 15616kB time=00:00:28.78 bitrate=4444.7kbits/s  
frame= 718 fps= 30 q=-1.0 size= 15956kB time=00:00:29.38 bitrate=4448.7kbits/s  
frame= 728 fps= 29 q=-1.0 size= 16420kB time=00:00:29.78 bitrate=4516.6kbits/s  
frame= 734 fps= 29 q=-1.0 Lsize= 16632kB time=00:00:30.02 bitrate=4538.3kbits/s  
video:15853kB audio:703kB subtitle:0 global headers:0kB muxing overhead 0.455517%
```

Else you should check for any errors in console output. Make sure that you've provided a correct extension for your stream (**.ts**, **.mpg**, **.avi**, **.mk4**, **.mkv** and such): ffmpeg uses this to determine output file type. Look into [ffmpeg documentation](#) and experiment with your stream till you get your file.



If you've got your file and can play it with your favorite media player, you can now add your stream type at the **Config** page (e.g. rtmp rtm foo).

Check your ffmpeg path at your **Config** page. If you encounter issues with your particular stream protocol, you may want to try other versions of ffmpeg, which are supplied with their respective applications and commonly located under:

```
/volume1/@appstore/MediaServer/bin/ffmpeg  
/volume1/@appstore/VideoStation/bin/ffmpeg  
/volume1/@appstore/AudioStation/bin/ffmpeg
```

If you want to provide additional output arguments for ffmpeg (-f for stream format or other codecs parameters), you can also do it at the **Config** page. First arguments are always *-i inputstreamname -t recordduration* and last argument is *outputstreamname.extension* (you will see all arguments used at the **Log** page after each ffmpeg trigger).

You can now create a channel with some name, your stream address and your file extension and schedule some records.





### EPG import

There are two ways to get EPG information. Please read this section carefully to avoid issues.

**The first way** is to use third party EPG data, which is provided in XML format (XMLTV). This is also the only way if you are using [ffmpeg](#) to record your streams.

If you have a free XMLTV provider from your region, you should add its address in **Config → EPG**. Now you should be able to import EPG by pressing the corresponding button or by enabling the automatic synchronization. As of now there is no direct feedback for this feature and full synchronization takes some time, so please check the log file for the progress or error status.

There are some XMLTV providers available such as:

- [Egon zappt](http://xmltv.spaetfruehstuecken.org/xmltv/channels.xml.gz) (<http://xmltv.spaetfruehstuecken.org/xmltv/channels.xml.gz>)
- [XMLTV.se Community](http://xmltv.xmltv.se/datalist.xml.gz) (<http://xmltv.xmltv.se/datalist.xml.gz>)

If you are using their data, please consider to support them and their respective communities and to spread the word.

If you don't have any free XMLTV provider and an x86 CPU, you may want to try using a third party tool [mc2xml](#). For Synology you must download a latest Linux version in any public accessible folder. Browse the homepage of [mc2xml](#) for more information regarding setup, accessing and running this tool. **You must run it once manually to create a configuration file.** Once properly configured, you can change following settings in **Config → EPG** to match your setup. For example:

**mc2xml full command line:**

```
/volume1/public/mc2xml -D /volume1/public/mc2xml.dat -o /volume1/public/xmltv.xml -U
```

**Initial path for an XMLTV import:**

```
/volume1/public/xmltv.xml
```

Note: use absolute paths everywhere to avoid working path issues.

You may also need to rename your channels to match channel names from the output file or use a renaming file. I ask you to understand, that [mc2xml](#) is a fully separate tool and so no further integration or support can be provided here. If you are using this tool, you should also consider to support and/or donate to its respectful author.



**The second way is not supported anymore and will be removed in future versions.** It is applicable only if you are using http-based transport streams (such as those from network SAT tuners), which also carry EPG information within themselves.

According to the specification, one channel can carry several other channels' EPG as well. So the best method is to enable grab on your favorite channels one by one to see, which EPG data would be provided by them. You can change the maximal grabbing duration per channel at the **Config** page. To mark a channel for grabbing, click on the corresponding symbol or edit it and use the provided switch. To avoid performance issues, no "grab all" switch is provided.

As reported, several streams do not transport a channel list at all, so EPG data cannot be properly ordered. This can result in log entry "EPG grab finished with 0 channels, XYZ guide infos, joined amount: 0". In such cases your channel IDs may be carried as a part of your URL. Already implemented are following types:

`http://10.0.0.1:8001/1:0:1:6DCA:44D:1:C00000:0:0:0:`

`http://10.0.0.1/stream/tunerequest00040000C0FFFFFF00B49A60044D00FF00016DCA010101FF`

Please contact me if you have a same issue with a different URL.

Both ways can be combined if applicable and both ways require that the channel names you're using match those provided by your stream or XMLTV provider (e.g. please use 'CNN' and not '1 - CNN' or 'epg.cnn.com' or 'My favorite news channel').



## 6. License and disclaimer

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

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You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses>.

Please note that the recording, keeping or distribution of streams may be forbidden by the law of your country or your local content provider. Author takes no responsibility for any records taken or used.

No stream is modified by this package. Plain streams will be copied “as is” while other streams will be forwarded untouched to an external application.

If you are using XMLTV source for your EPG guide, please make sure, that your source provider allows accessing his data with third party applications.



## 7. External modules

Following packages and modules are licensed under their respective licenses.

- [Python](#)
- [Bottle: Python Web Framework](#)
- [CherryPy - A Minimalist Python Web Framework](#)
- [SQLite](#)
- [jQuery](#) and further based-on themes, modules and locales:
  - o [jQueryUI](#)
  - o [jQuery Mobile](#)
  - o [jQuery Mobile DateBox](#)
  - o [SlickSwitch](#)
  - o [DataTables](#)
  - o [TimePicker](#)
  - o [File Tree](#)

Some code snippets are taken from or inspired by several community help pages, tutorials, code samples and so on. I want to thank all the developers and contributors, whose work helped me so far.



## 8. Troubleshooting

If you encounter an undefined error, please check the package log file. You can access it either by using the package frontend and navigating to the **Log** tab, or by opening a **Package Center**, navigating to **Installed** tab, clicking on **tvstreamrecord** and selecting **View log**. The newest entry may give you a clue, what was wrong. If it doesn't help, please contact me.

If you encounter any issue with **EPG** or **Log** pages, you can reset both at the **Config** page.

## 9. Modifying the package

**Although this package is open sourced, author takes no responsibility for any damage resulting from altering or updating the source code of this package. Any changes you've made will be overwritten with a new version of this package.**

The best way to get this package altered is to contact author and provide your solution or addition. If you have a shell access to your DiskStation and you know what you do, you can still customize this package:

- You can add further [jQueryUI themes](#) by copying them into the **css** folder of this package
- You can add or change locales in the **js\i18n** folder
- You can add or change languages in the **lang** folder (see supplied dummy for more details)

If made correctly, you must be able to select your addition with reopening or refreshing a **Config** page. **You can also send me your own translation to be included in following versions.**

## 10. Contact and support information

If you have any questions, issues, ideas or feedback, feel free to contact me using one of the following ways:

- [Project front page](#)
- [German Synology community forum](#)
- [E-Mail](#) (support languages: English, German, Russian)
- [GitHub](#) users can also open an issue, comment my code or contact me there