A Guide to configuring ToppyWeb

Note: Version 3 of ToppyWeb supports connections to more than one PVR and also to alternative (non-PVR) repositories for REC files (referred to as REC servers). This guide discusses multiple PVR connections but ToppyWeb works equally well with a single PVR.

Where can ToppyWeb be run?

ToppyWeb can be run on any system that can reach the FTP server(s) that connect to your PVR(s). It does not have to be run in the same system as the USB connection, In fact it cannot access the USB connection directly. The system will need to have web server running on it that supports PHP (with PHP FTP support).

What will you need?

A **Web server** which supports PHP (with the FTP module)
FTP servers connected by USB to your PVRs (either ftpd.topfield (Linux-based) or ftp4t.exe (Windows)
The **EPG_Upload TAP** running on your PVR (for the Timer functions)
An **EPG source** (for the EPG display) Sources supported are XML (various including XMLTV, TEDS, IceTV), TGD files, IceTV cache files and MEI files. The source file(s) must be accessible to ToppyWeb as either local files or from an FTP server.
(Optional) To access files from other systems you may need to have an FTP server running on that system. For Windows I recommend FileZilla. It has the advantage that it appears to the client (ToppyWeb) to be running on a UNIX system. Any such server that is declared to be **REC server** will appear on the **Files** web page.

Preliminary steps

Choose names for your PVRs

The next step is to choose names for your PVRs. These names will be used internally by ToppyWeb to link the various configuration aspects and will also be used in headings and labels on the page displays.
The names can be any (reasonable) length, be alphanumeric and may contain spaces. Special characters should be avoided. The names are case sensitive. Mixing upper and lower case is fine. The default name of "MyToppy" is an example of an acceptable name. I will use this name for remainder of this guide. For multiple PVR connections simply repeat each named section for each PVR (using that PVR's name).

Do you store REC files on a PC (or other file storage system) accessible by FTP?

ToppyWeb V3 allows you to declare these as **RECservers** which means they will appear on the **Files** web page (with the PVRs) and the REC files stored there can be managed remotely. Choose names for any RECservers you may have.

RECservers must currently be accessible by FTP (an FTP server must be running on the storage system). A future release of ToppyWeb will allow disk storage "Local" to the webserver to be used (without needing an FTP server).

A future release of ToppyWeb will allow remotely managed transfer of REC files between PVRs and RECservers.

How will you secure ToppyWeb?

If you be allowing access from the internet you will need to keep intruders out with some form of security. This can be provided by the web server or by ToppyWeb.

Server security will protect all files in the web folder. I recommend you enable server security if you can. Most web servers can provide better security than that provided directly by ToppyWeb.

ToppyWeb can secure only the php files. Non-php files will need to be moved to an alternative location or deleted. In particular your **config.ini** should be stored outside the web folder. For Linux-based systems I recommend storing **config.ini** in **"/etc/toppyweb"** (or "**/opt/etc/toppyweb**"). For Windows there is no recommendation.

ToppyWeb security options are Server, PHP or File.

Server: ToppyWeb security is disabled. You will configure any necessary security in the server.

PHP: The list of authorised userid/password pairs will be stored in a simple PHP file. Use this option if the list needs to be stored in the web folder

File: The list of authorised userid/password pairs will be stored in a text file which must not be stored in the web folder (where any intruder could read it). The default location is either with the config.ini (if not in the web folder) or in the working folder.

Web server details

ToppyWeb needs to know some details of the system on which it will be run. Predefined platforms are Windows, MacOSx, IceBox2 and LinuxBased. The default value is LinuxBased. These names are just labels pointing to configuration options so you can define your own platform type if you prefer or have a need.. For example you might label your platform Fedora4. The naming rules for platforms are the same as for PVR names.

You will also need to decide which extended features of ToppyWeb you wish to activate. These features need resources that might not be available on all installations. Please read the Extended features section for more information.

FTP server details

For each FTP server you will need to know the server type. Known server types **are ftpd-topfield**, **ftp4t** and **FileZilla**. The server connected to your PVR will be one of the first two types.

Each FTP server will need a name. The name of any FTP server connected to a PVR must be the same as the name of the PVR.

Note: ToppyWeb V3 longer needs the **FilenameOffset** value to be declared.

EPG_Upload details

You will need to the folder location which EPG_Upload uses for its TGD and TSV files. This is set by the "TGD Directory" option in epg_upload.ini

EPG source details

You will need to know the folder name where the EPG source file(s) are located and how ToppyWeb can access that folder (FTP or Local).

For XML and MEI files you will also need to know the file name. (TGD and IceTV cache files have fixed naming structures)

Channel details

For each TV channel you will need to know:

The logical channel number (LCN)

The name that your PVR displays for that channel

The name that EPG_Upload expects to find in TGD files (the "**service_name**" in epg_upload.ini)

TEDS details (optional)

If you use TEDS you will need to know the folder where TEDS is installed and how ToppyWeb can access that folder (FTP or Local)

You can skip this if there is no need for ToppyWeb to access any TEDS files.

Log Files (optional)

ToppyWeb can display for you any text files that it can access. These will usually be log files for PVR related activities but can be any reasonably sized text file.

You will need to know where each log file is located (folder and filename) and how ToppyWeb can access that file (FTP or Local)

ToppyWeb knows how to access the log files for the EPG_Upload TAP, the PBK TAP, TEDS and the XMLTV grabbers used by TEDS.

File caching

ToppyWeb can cache the extracted results of the source files it uses but these cache files do take space to store on the system running your Webserver. If this is a Flash based system there might not be enough space available. Caching can be disabled if space is in short supply.

AJAX technology

To improve the user experience ToppyWeb 3.3.2 introduces AJAX technology. The initial implementation is for adding a new Timer from the EPG page.

Without AJAX the entire EPG page would need to be rebuilt in the server and sent to your browser. With AJAX the request is sent to the server in the background and if successful the page is dynamically modified to show the new Timer.

This technology requires the Browser that you use to support it. If ToppyWeb discovers that your Browser does not support it you will be notified by a warning message and AJAX will be disabled for the remainder of the current browsing session. If frequent warnings annoy you the AJAX feature can be disabled.

AJAX is supported by most recent browser programs.

Create a config.ini file

The **config.ini** file can be created in either the web folder or (for improved security) in another location.

To keep **config.ini** in an alternative location you will still need to create a small preliminary **config.ini** in the web folder which will tell ToppyWeb where to find the main **config.ini** file. This file should contain one setting only. Any other settings will be ignored.

[General]
ConfigFolder=/etc/toppyweb
(/etc/toppyweb is the recommended location for Linux-based systems)
Now create the main config.ini file. You can copy one if the distributed sample files or create a new file from scratch.

Configure the Web server to ToppyWeb

In the **[WebServer]** section configure the platform type. Predefined platforms are Windows, MacOSx, IceBox2 and LinuxBased. The default value is LinuxBased. If necessary you can define your own platform type.

[WebServer]
Platform=Fedora4
If you are defining your own platform type, or need to override a value for a predefined type, add a matching **[Platform Platformtype]** section.

[Platform Fedora4]
WorkingFolder=/var/toppyweb
(Note that if a matching **[Platform platformtype]** section cannot be found then a default generic section identical to LinuxBased will be used.)

Configure the PVR names into ToppyWeb

Configure ToppyWeb with the chosen names by adding it to the list of available PVRs. Available means that ToppyWeb can reach them via an FTP connection.

Any REC file servers should also be declared.

Because an FTP connection is used the name(s) must also be added to the list of available FTP servers.

Both of these are done in the **[General]** section

For a single PVR:

[General]
MyToppies=MyToppy
FTPservers=MyToppy

For multiple PVRs and a REC file server:

[General]
MyToppies=MyToppy1,MyToppy2
RECservers=MyRecServer
FTPservers=MyToppy1,MyToppy2,MyRecServer

The configuration of FTP servers will be covered later. For now we will continue with the PVR itself. If you have other FTP servers I recommend your PVR(s) be named first in the FTP server list, followed by any RECservers and then by any other FTP sources.

Configure the PVR

Add a **[Topfield pvrname]** section (pvrname is the name you chose for your PVR) where you configure the details of your PVR.

[Topfield MyToppy]
EPGdata=/EPGdata
DataFiles=/DataFiles
ProgramFiles=/ProgramFiles
HDDsize=120
ExpandServer=Yes
ExpandFolders=Yes

The above values are the default values used.

HDDsize is the decimal GB value used by disk drive manufacturers (i.e. 120,000,000 bytes) not the hexadecimal value displayed by operating systems.

EPGdata is the location of the files used by the EPG_Upload TAP and should be set to the same location as "TGD directory" in epg_upload.ini

ExpandServer and ExpandFolders determine whether the server and folders are initially expanded or collapsed.

Other sections you should review are [Timers] and [Recordings]. Some default values you might wish to override are:

[Timers]
DefaultDuration=120
DefaultPrepad=-05
DefaultPostpad=+10
NumberOfDays=30

[Recordings]
InitialSort=Name
ForceWinNames=No
The configuration reference has details of these options

Configure any REC servers

For each REC server add a **[RECserver servername]** section defining the details of that server.
[RECserver MyRECserver]
Folder=/DataFiles
HDDsize=120
ExpandServer=Yes
ExpandFolders=Yes
Folder is the the base folder that will displayed on the **Files** web page.
Other options are the same as for PVRs

Configure FTP connection(s)

Your PVR will be accessed by an FTP connection. Here we will define that FTP connection to ToppyWeb. RECservers and any other FTP servers should also be defined usingthe name of that server.
First add an **[FTPserver pvrname]** section:
[FTP MyToppy]
Type=ftpd-topfield
Name=localhost
Port=21
Username=anonymous
Password=password
Next add an [FTP servertype] section:
[FTP ftpd-topfield]
SleepWake=No
(Note that for ToppyWeb V3 the FilenameOffset parameter is no longer required)

Configure Channels

An important step is to define all the channels you use on your PVR..This is done in the [General] section:
[General]
Channels=ABC,ABC2,Seven,Nine,TEN,SBS,SBS News
You should list ALL channels you use. The order determines the order the channels appear in timer setting lists and also the column order on the EPG page. You can suppress specific channels from appearing in the EPG using HideEPG=Yes in the individual **[Channel channelname]** sections.
Channel names used by ToppyWeb must be compatible with the EPG_Upload TAP. The names defined must match the **service_name** values defined in **epg_upload.ini**. They are the names that will be used in the TGD files. If you use TEDS then the names are determined by the **epg_upload.ini** created during TEDS installation.

For each channel name you should add a **[Channel channelname]** section. The supplied default.ini contains the channel names for my area but I recommend you add definitions for all your channels to your own config.ini even if they match the defaults. An example:

[Channel SBS News]
ToppyName=SBS DIGITAL 2
HideEPG=Yes

ToppyName is the Channel name that appears on your PVR. EPG_Upload uses this name in epg_timers.tsv and rec_play.tsv so ToppyWeb needs to know what it is.

HideEPG will suppress this channel from the EPG page if set to Yes.

Defining the EPG source

First declare what type of EPF source you will be using (XML, TGD, ICE, MEI). XML is chosen in this example.

[EPG]
EPGsource=XML

For your chosen source type define where ToppyWeb can find necessary file(s). For each type the default values are shown:

[EPG XML]
Servername=Local
TEDS=Yes
Folder=TVguide2
Filename=listings.xml
[EPG TGD]
Servername=MyToppy   *<= The name of your first PVR*
Folder=/EPGdata
UseYesterday=No
UseToday=Yes
UseTomorrow=No
[EPG ICE]
Servername=MyToppy   *<= The name of your first PVR*
Folder=/EPGdata
TimezoneOffset=600
[EPG MEI]
Servername=MyToppy   *<= The name of your first PVR*
Folder=/EPGdata
Identifier=Freeview.mei
FileCacheTime=60

Enabling Extended features

The extended features of ToppyWeb all build cache files and thus require sufficient storage to be available on the system running the web server to store these files. Because of the possibility of storage problems the extended features are disabled by default. The notes below will discuss the specific requirements of each feature.

Workstation (PC, Mac, Linux)

These should all have plenty of available storage.

IceBox2

An IceBox2 will most likely NOT have sufficient storage available on its internal flash drive, however the IceBox2 also has a RAM disk which can be used. The downside of the RAM disk is that it is lost when the IceBox2 reboots requiring the cache files to be rebuilt. The /var and /tmp directories are stored on the RAM disk.

NSLU2 (unslung)

An unslung NSLU2 will (almost certainly) have plenty of space in the /opt/var directory stored on the external drive.

NSLU2 (not unslung)

An NSLU2 that has NOT been unslung will not have sufficient storage to enable the extended features.

File and Timer caching

This feature will cache File and Timer details. If current information cannot be obtained directly from the PVR (or RECserver) the details stored in the cache will be displayed instead. No "actions" will be available when cached details are being displayed.

Depending on the number of folders and files on each PVR (or RECserver) the cache file will be approximately 10-25KB for each server.

This feature is enabled with the EnableCaching option

[Web Server]
EnableCaching=Yes

Extended file header information

This feature will read the header information stored in REC files and display it on the **Files** webpage. This is the information displayed on the PVR when you press the "*i*" button against a recording.

Because of the overhead in reading the headers ToppyWeb will cache any header information and hence forward display it from the cache. To avoid unacceptably long response times ToppyWeb limits the amount of time it will spend reading the headers and will skip any remaining files if it reaches this limit.

If you have a large number of new files, or are building the cache for the first time, simple keep refreshing the page until the headers for all files have been read into cache.

The windows server "**ftp4t.exe**" uses extremely large buffers which unfortunately means that reading the headers of files is particularly slow (approx 3 secs per file)

Note that the character "?" in a recording name will prevent the header of that file from being read. Other special characters may also cause problems. Windows compliant names will be OK.

The cache files for this extended header information will be approximately 20-50KB for each PVR (or RECserver).

This feature requires the EnableCaching option (above) and is itself enabled with the ExtendedDescription option

[Web Server]
EnableCaching=Yes
ExtendedDescriptions=Yes

EPG data caching.

These settings enable caching of the processed EPG data and can give a considerable performance improvement. EPG caching is disabled by default.

[EPG]
EnableEPGCaching=<Yes|No>

The size of the EPG cache files depends on the number of channels programs and the length of the descriptions. Typically, for Sydney IceTV data each daily cache is around 100KB.

[EPG]
CacheExpiryToday=<minutes>
CacheExpiryTomorrow=<minutes>
CacheExpiryBeyond=<minutes>

The EPG data for each day is cached independently and their retention periods are managed by the three additional options. The retention periods define how long to keep each cache file without refreshing its contents.

CacheExpiryToday is the number of minutes to retain the EPG cache for today. The default value is 60 minutes.

CacheExpiryTomorrow is the number of minutes to retain the EPG cache for tomorrow. The default value is 7200 minutes (12 hours).

CacheExpiryBeyond is the number of minutes to retain the EPG cache for days beyond tomorrow. The default value is 10800 minutes (18 hours).

Cache files for days earlier than yesterday are automatically deleted.