

“FWLOAD” TAP

1 INTRODUCTION

The “FwLoad” TAP has been primarily designed to provide a way of installing UK firmware and patches from a Windows PC using the TAP Installer utility. It performs much the same functions as the HDFW TAP (on which it is heavily based), but uses file names and locations rather than user inputs to determine the actions required. In this way experienced users can set up different firmware and patch configurations for different models for use by less experienced (or lazy!) users without the latter needing to provide any inputs.

It includes a feature to apply personal preference patches¹ to firmware such as the Topy.org.uk and MyStuff recommended firmware versions. In this way users can rely on others to keep track of the bug fix and performance improvement patches, and only concern themselves with those that interest them. Unwanted patches in these firmwares can be removed in a similar fashion.

However it can also be used on any Topy model supporting TAPs in conjunction any PC (Windows, Mac, Linux etc) with a Topy connection supporting the transfer of files downloaded from the internet.

FwLoad supports the use of the “aXeL” accelerated loader feature, which speeds up the Topy boot function by several seconds.

2 FILES & DIRECTORIES

2.1 “FwLoad.tap”

This can be placed in, and run from, any directory. If run from “/ProgramFiles/Auto Start”, it will self delete so as not to run repeatedly². It must not be renamed if it is to be run from “/ProgramFiles/Auto Start”, or the auto delete will not work.

2.2 Firmware File

The firmware to be used must be placed in the working directory, which by default is “/ProgramFiles/InstallerFirmware”. The naming convention for this file is defined in para 4 below. This allows firmware for all the UK models to be placed here and FwLoad will select the relevant firmware file.

A special “null” file, in the absence of a proper firmware file, directs FwLoad to apply the patches to the existing firmware. Unless the ini file (see below) indicates otherwise, this file will be deleted after having been detected so that it is not subsequently used in the event of transfer failure of a true “.tfd” file. The content of the file is immaterial, but the version in the zip file includes text to explain its purpose in case of it is found out of context.

¹ E.g. 12 hour front panel clock, USB acceleration, faster fast-forward/rewind, extended time-shift duration.

² It is possible to initiate a reboot from a PC etc. Hence by putting FwLoad in Auto Start, the PC can cause it to run without any user intervention at the Topy.

2.3 Patches

The “.tfp” files for patches to be added & removed should be placed in “/Add” and “/Remove” subdirectories of the working directory. If such a patch is only to apply to certain models, it should be put in subdirectories of the form “/Add/xxx” or “/Remove/xxx” where “xxx” is the system ID (456, 457 etc).

Patch removal is performed before the new patches are applied, so this feature can be used to update patches by putting the old patch file in “/Remove” and the new one in “/Add”. If the same patch is placed in “/Add” and in “/Remove/xxx”, it will be installed for all models except “xxx”.

If you try to apply a patch that is already in the selected firmware (or remove one that is not), or one that is not designed for this firmware, you will get a warning message, but there should be no adverse effects.

N.B. For patch removal, you should use the same version of the patch file as was originally used to patch the initial file. Failure to do so MAY lead to unusable firmware that goes into a continuous reboot cycle, from which the only recovery may be by firmware update using a direct USB connection from a PC. DO NOT USE THIS FEATURE UNLESS YOU ARE CONFIDENT YOU KNOW THE PATCH VERSIONS USED.

2.4 “aXeL.tfd”

If this file is present in the working directory, the “aXeL” accelerated loading feature will be used. Its use is essential if TF5800 firmware is to be loaded onto a TF5800t.

2.5 Optional “FwLoad.ini”

This file is optional, but can be used to modify some aspects of operation. Details are given in para 5 below.

2.6 Optional “FwLoad.lng”

This is FireBird library language-type file that allows the on-screen messages to be defined for several different languages. The language selected is that used in the Topy menu system, so requires no further selection. If no entries are found for a language, the English versions are used. The English text can be amended if you think some messages could be clarified.

Unlike the standard FireBird library implementation, however, FwLoad will operate with the original English text if this file is not found, and will require slightly less memory. It is therefore recommended that this file is not installed unless required

It is recommended that this file is placed in “ProgramFiles/Settings”, if it is required.

2.7 Optional "Skin" File

The default colour scheme can be modified using as "skin" file in "ProgramFiles/Settings/Skins/". A copy of a MyStuff skin file can be used, though only the following elements are used:

- "Background=" (normal background)
- "TextForeground=" (normal text)

and all other entries are ignored. The keywords above should be followed by the red, green & blue values (separated by commas) in the range 0-255 with no spaces or final comma (e.g. 255,0,0 for red, 255,255,0 for yellow etc).

In order of precedence, the following file names can be used:

1. FwLoad.mcf
2. EMJBTaps.mcf
3. CurrentlySelectedSkin.mcf

The last of these is automatically generated by MyStuff to allow the use of a consistent colour scheme across all compatible TAPs.

2.8 Files Generated by FwLoad

Every time it is run, FwLoad produces a log with all the on-screen messages plus further information to help in the event of problems being encountered. The log is stored as a text file "FwLoad Log .txt", by default in "/ProgramFiles/InstallerFirmware", though the latter can be changed by the ini file – see para 5.7 below.

When a new version of the firmware is produced, this is stored on the hard disc as "LatestVersion.tfd" in the working directory.

3 USE

When FwLoad is run, a "commentary" of its operation is displayed on screen. The main operations are:

1. The firmware file is read from hard disc or Flash memory as appropriate, and in the former case checks that it is compatible with the Topy. If it found to be inconsistent, and error message is displayed and the TAP exits. You can, however, install firmware intended for the 5800 (ID 456) on the 5800t (ID 458).
2. A search is made for patches to be added or removed. Those found which are relevant to the actual Topy model are displayed.

3. If relevant patches are found, the firmware (which is normally held in a compressed form and uncompressed as part of the boot process) is uncompressed. The uncompression (and subsequent recompression) takes several seconds, so progress “thermometers” are displayed to give confidence that nothing has gone wrong. If there is insufficient memory available for the uncompressed firmware, any other TAP Commander-compliant TAPs are stopped to free up memory. If this fails to release enough memory, FwLoad will close, and will need to be run again after manually closing any memory-hungry TAPs.
4. If patches are found, FwLoad next attempts to apply these to the uncompressed firmware. The on-screen message will indicate whether the patching was successful, the patch was already applied, or if the patch is not suitable for the selected firmware.
5. If any patches have been applied or removed, the firmware is then recompressed
6. If the firmware has been loaded from disc, if new patches have been applied to current firmware, or if “aXeL” is to be used when not been used previously, the new firmware is loaded into Flash memory and saved as “LastVersion.tfd” in the working directory of the hard disc.
7. If new firmware has been loaded into Flash memory, FwLoad will attempt to reboot the Topy to start using the newly loaded firmware. However this will not occur on the TF5810, or on any model if a recording is in progress, and a manual reboot will be needed for the new firmware to be used. If the firmware is unchanged, FwLoad shuts down without rebooting the Topy.

A log file of the operations performed (including any error reports) will be stored as “FwLoad Log.txt” in the working directory.

4 FIRMWARE FILE NAMES

The firmware file name by default takes the form “Recommendedxxx.tfd” where xxx is an optional model indicator for UK models only. If multiple files are present, the following precedence rules are applied:

Model/SysID:	<u>5800/456</u>	<u>5800t/458</u>	<u>5810/457</u>	<u>Other</u>
1 st Choice	Recommended_5800.tfd	Recommended_5800t.tfd	Recommended_5810.tfd	Recommended.tfd
2 nd choice	Recommended 5800.tfd	Recommended 5800t.tfd	Recommended 5810.tfd	FwLoadNull.tfd
3 rd choice	Recommended.tfd	Recommended_5800.tfd	Recommended.tfd	#
4 th choice	FwLoadNull.tfd	Recommended 5800.tfd	FwLoadNull.tfd	#
5 th choice	#	Recommended.tfd	#	#
6 th choice	#	FwLoadNull.tfd	#	#
7 th choice	#	#	#	#

If none of the preceding files are found, FwLoad will close down without doing anything, and will not initiate a reboot.

The presence of the null file, “FwLoadNull.tfd”, indicates that the existing firmware will be patched rather than a version from the hard disc.

N.B. The “ini” file can be used to change “Recommended” in the above to any other text string – see para 5.6 below. However it is not currently possible to change the name of the null file.

5 ADDITIONAL FEATURES AVAILABLE VIA AN “.INI” FILE

5.1 General

The operation of FwLoad can be tailored by using an “ini” file, but it should not be necessary for most users. The version in the zip file corresponds to the default settings, so must be modified to have any effect.

To be used, the file must be called “FwLoad.ini”, and installed in “/ProgramFiles/Settings/” on the Topyy. It is a text file, which should be prepared using WordPad rather than Notepad if you are using a Windows PC.

Blank lines and all text on a line after “#” are ignored. The commands listed below must appear at the start of a line. You can omit, or comment out with “#”, any lines where you do not wish to amend the default setting.

5.2 Inhibiting Use Of Accelerated Loader

"Inhibit aXeL" will inhibit the use of the accelerated loader even if “aXeL.tfd” is present.

5.3 Forcing Use Of Accelerated Loader

“Use aXeL” will lead to the generation of an error message if “aXeL.tfd” is not found in the relevant directory.

5.4 Retention of “FwLoadNull.tfd” File

If "Retain null file" appears at the beginning of a line in the “.ini” file, the null file used to indicate use of existing rather than downloaded firmware is not deleted.

5.5 Changing Working Directory

“Working Directory: /xxx/yyy” changes the directory from which the firmware files are read to any other directory you care to nominate. **N.B.** This does not change the destination of the log file.

5.6 Firmware File Name

"Firmware File Name: fred.tfd" changes the name of the firmware file to be used to “fred.tfd” instead of “Recommended.tfd”. “Recommended_5800.tfd” becomes “fred_5800.tfd” etc

5.7 Changing Destination for the Log File

"Log Directory: /xxx/yyy." changes the directory in which the log file is stored

5.8 Changing the Minimum Message Display Time

"InfoShowTime: <Integer, 1-999> defines the minimum time (in units of 10 ms) for which progress messages are displayed. The default value is 100 (1 second). If the message describes an activity that takes longer than the selected value, it will be displayed until that activity is complete. A value of 100 dominates the total time required for patching operations, so increasing this to improve visibility of progress messages will slow the process down. On the other hand reducing the value will speed up the patching at the expense of visibility of messages.

5.9 Changing the Error Message Display Time

"ErrorShowTime: <Integer, 1-9999> defines the minimum time (in units of 10 ms) for which error messages are displayed. The default value is 1000 (10 seconds).

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7 DOWNLOAD

From <http://myweb.tiscali.co.uk/emibtaps/FwLoad/FwLoad.zip> , including this file and a copy of aXeL.tfd.

8 WARNINGS

I have modified the R2-D2/FireBird code, often without really understanding what I was doing. It appears to work satisfactorily on a TF5800, TF5800t, and TF5810, but YOU USE IT AT YOUR OWN RISK.

9 VERSION HISTORY

B1: Initial general release.

B2: Check on system version added to ensure incorrect firmware cannot be loaded

B2a: Version check modified to allow 456 firmware to be loaded onto 458 models.

B3: Patch removal feature added

B3.1: File naming options added to allow correct version to be selected when 2/3 versions added.

B3.1a: Change to naming convention.

B3.2 Model-specific patch directories added.

B3.3 Ability to patch existing firmware added.

Multilingual support added.

Progress messages improved, notably clarifying whether reboot will occur.

Code re-organised to ease future support.