Export/Import

Exporting tunes

Tab-delimited text.
The top command on the File > Export sub-menu is for exporting tab-delimited text. This is used to export a whole file of abc tunes in a format which can be imported into databases. Each tune occupies a single line of text in this format, with the header fields separated by tab characters. You specify which fields are to be included in each record by typing in a string of characters (and of course you must set up your database to expect the same number of fields and in the same order). You can specify multiple repetitions of a field by placing a single digit after the letter. The default order for this is:

XT3CSHNRpMLQKt

So here the Title field can occur up to three times. If a field is absent from the abc it is still included in the exported file, but is empty. The tune is represented by the lower case letter t. Note that in this format each tune can only include one return character at the end, so all other returns are substituted with asterisks. Only fields in the header are output as separate fields, so any fields in the tune are included in the tune itself. The identifier p (in lower case) adds a N: field to the tune which holds file reference to the original file.

Picture
BarFly offers several ways of exporting pictures of the music. Using the command in the File > Export sub-menu you can export pictures in many different formats. You must be in Split-Screen mode to activate this command. The selection of formats available depends on the version of Quicktime you have. You can also export a PICT by copying it to the clipboard, and by means of the Print Preview command. PICTs exported by means of the Export sub-menu contain a bitmap representation of the picture, and will produce a much larger file size than those exported by means of the Print Preview or Copy methods, which export vector information. In the registered version of the program Print Preview can export multiple tunes assembled onto a single page for printing, and Export>Picture can export multiple tunes (selected in the index pane) to separate files in a single operation.

Quicktime Movie
Tunes can be exported as Quicktime movies (sound track only). Quicktime is cross-platform, and QT movies will sound exactly the same when played on a PC as they do when BarFly plays the tune. They are reasonably memory efficient (typical size for an average abc tune is about 5Kb), and you can embed them in web pages to be played with the Quicktime Plugin. When registered, the program can export multiple movie files.

AIFF Audio
This is a professional quality audio format which is widely supported across all platforms. The default quality settings (uncompressed 16-bit stereo at 44KHz sample rate) will sound even better than BarFly itself does, and you can generate these high quality files even on machines whose built-in sound is much more limited. The main drawback here is the huge file size; typically 5Mb for an average tune. When registered, the program can export multiple AIFF files. AIFF files can be converted to mp3 format using iTunes, and to several other audio formats using Audacity (freeware).

Standard Midi fileÉ
This command leads to a dialog in which you can choose whether you want a format 0 or format 1 Midi file. Format 0 puts all the voices into a single track, whereas format 1 uses a separate track for each voice, plus a "timing track" which contains information common to all tracks, e.g. key, metre and tempo settings. Format 1 is a bit more efficient for multi-voice tunes, especially when the voices are played on different instruments; it is also easier for programs to parse, and some notation programs will only accept format 1. Older versions of BarFly used Quicktime to export Midi; this option is still available, although Quicktime can only export format 0 Midi files, and suffers from a long-standing bug which causes long notes to be truncated and play staccato. When registered, the program can export

multiple Midi files.

The standard Midi file is the music world's Lingua Franca; software to deal with it is available for all platforms. You can use this to export tunes from BarFly in a form which can be used by other music programs. The Midi format is very limited in what it can represent, it is intended to represent music as played with very little concession to notation. There is no way to represent bar lines, clefs, beams or repeats for example. While Midi can represent pitch-bend information, it is rather difficult to get this to work reproducibly so I have not implemented it. You should make sure that the program is set to play in equal temperament and avoid using the tune directive, otherwise the results may be excruciating!
If you wish your Midi files to be imported into another program, you should also turn off stress programming to ensure that the notes are all of the expected length.

abcm2ps
The export to abcm2ps option is only available under OS X, and of course you must have abcm2ps installed for it to work. Abcm2ps is a free, and very poweful Unix command-line program which converts abc to postscript files. Normally it is controlled and operated using commands typed into a Terminal window, however BarFly allows you to set up all the command-line options in a dialog box. You can choose to export a single tune, or a whole file of tunes (registered version only), and to send the output direct to your printer, so this command gives you an additional way of printing. If you have a postscript printer this will give you publication-quality printed music, although since it's a different program which is interpreting the abc and composing the printed page the output is no longer WYSIWYG.

You can download the MacOS X version of abcm2ps from <http://abcplus.sourceforge.net/#abcm2ps%20binaries>. (Current version is 3.7.21)

This version of BarFly was written to work with abcm2ps v3.6.2; it will work with other versions, but earlier versions may not support all of the options, while later versions may offer options which are not included in the dialog. To install, just double-click the .pkg file.
In BarFly, open an abc file and choose 'abcm2psÉ' from the File: Export submenu. For a first tryout, just accept all the default settings by clicking on 'OK'. Terminal should start up, and abcm2ps will run, displaying any error messages in the Terminal window. The ouput file is called 'Out.ps' by default, and is written to your home directory. If you have Photoshop 7, you can use it to open this file. It will open with a transparent background; use Photoshop's "Layers: New > New Layer from background" menu command to fill in a white background behind the picture. Photoshop will only process the first page of the file; if your music extends over mutiple pages you can set abcm2ps to produce mutiple EPS files instead of a single postscript file. Alternatively you can redirect the output of abcm2ps to MacGhostView, or to Macps2pdf to make a pdf file. MacGhostview can be downloaded from:
<http://www.kiffe.com/macghostview.html>
($20 shareware) and macps2pdf is a (free) part of the MacGhostView distribution. You can place these programs anywhere on your hard drive since BarFly uses the Finder to locate and start them up.
 If you already have MacGhostView installed you can also use Graphic Converter. In any case, the quality of the picture when displayed on screen is not particularly good (BarFly generally produces better fixed-resolution pictures), but the printed output is superb.

The dialog default settings assume that abcm2ps is located in /usr/local/bin/; you will get an error message which says: "/usr/local/bin/abcm2ps - Command not found" if this is not the case. You can find the location of the program using the Finder's Find command. Be sure to set visibility to "All", since the top level /usr folder is invisible. The file you want is a single file named "abcm2ps". You will also find a folder of the same name (normally located in /usr/local/share/ which contains the program's documentation, examples and format files. Abcm2ps has a vast number of options, and most of these are set using format files which you will have to edit in order to change. Its interpretation of abc also differs from BarFly's in some places, although the two programs are getting closer, and with any luck will disappear when we both implement the upcoming abc 2.0 standard.   There is a guide to using abcm2ps to typeset music written by Guido Gonzato at
<http://abcplus.sourceforge.net/>.

When processing abc this way, BarFly and abcm2ps will create three files in your home directory, named

'bfly.command', 'infile.abc' and 'Out.ps'. All three get overwritten each time you use the command. You can delete them if you wish, or simply leave them to be overwritten the next time.

Abcm2ps occasionally hangs, usually after reporting a line overfull error. If this happens you can kill it simply by closing the Terminal window. If this happens when you have directed the output to MacGhostView you should also quit from that (it's a normal Mac program so use command-Q), as it seems to get messed up by being asked to process an empty file.

Questions about abcm2ps should be addressed to its author, Jef Moine.

Tune Resource
This command is aimed at programmers who wish to use BarFly to create music which is to be played by another program, e.g. background music for a game. You will be asked to choose an ID (default is 128) and an existing file. The program then converts the current tune to a Quicktime tune, then writes two resources of type "TUNE" and "HEDR" to the file, containing the tune and header respectively. In order to play the tune your program should call GetResource twice to get the two resource handles, lock and dereference the handles, open a tuneplayer component then pass the header pointer to TuneSetHeader and the tune pointer to TuneQueue. The tune will play in the background with no further action required from your program. If you want to loop the tune or play a succession of tunes you should call TuneGetStatus periodically from your event loop and examine the queuetime field of the resulting TuneStatus. When this reaches zero the tune has finished, and you can either call TuneSetHeader and TuneQueue again to repeat it, or unlock the handles, release the resources and get new ones for the next tune. If this brief description is not enough, write to me and I'll send you some sample code.

Importing tunes

Tab-delimited Text
This command will turn Tab-delimited text files back into standard abc. You will be asked to specify the order of fields. Here, as in normal abc, the X: field should be first and the K: and t fields last. Other header fields can be in any order you want.

MusicXML
MusicXML is a new file format for representing music in eXtensible Markup Language. Like abc it is a text format, but it is not intended to be human-readable, and it produces HUGE files - typically 100x bigger than the same music in abc. MusicXML lets you specify everything about the music in as much detail as you want, and much of the information it contains cannot be translated into abc - for example you can specify the tail direction for individual notes, the direction of slurs and ties etc. More problematically, MusicXML permits temporary voices which can come and go in the course of a piece; this is achieved by winding the time point back and forward so that extra notes can be added to a measure. BarFly will do its best to cope with this by adding extra voices to the abc, and if necessary filling them with rests back to the beginning. Both the importer routine and MusicXML itself are works in progress - you should be prepared to do some editing on abcs imported by this route, as the program won't always get it right.

There are two MusicXML formats, and they use different ordering of symbols within the file. Score-partwise files have sequential parts, with the measures for each part contained within them. Score-timewise files have sequential measures, with all the parts contained within each measure. At the moment, BarFly will only import Score-partwise files; however, this is by far the commonest of the two formats.

Under OS 9 you may find that you need to increase the program's memory partition to work with MusicXML files, since the program has to load the file all into memory to work on it, and file sizes can be very large.

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