



Tiklpaks

Pak Maker User Guide

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Pak Maker User Guide



Intermorphic apps can use add-on content zipped into the form of an Intermorphic Tiklpak™ or Paks ("Paks"). These pre-packaged Paks are also the easiest way to use add-on content in our apps.

This User Guide is not about how to *use* Tiklpaks / Paks in an app, and which is covered in each app's User Guide, but is instead about how to *make your own*.

Making "Paks" (also called "tiklpaks" [i.e. with no capitalisation]) for Mixtikl or Noatikl (zipped up content collections) is much easier than it may at first seem. If you either know how to make samples / loops, or how to work with them, then you know enough to be able to make Paks. And if you don't know that, then you can still contribute to the community by meta-tagging files.

Don't forget, you can also use your own loops and samples in Desktop Mixtikl without first creating a zipped Pak. However, if you want to have portable content (i.e. to use on your device and desktop), you will need to make a Pak.

The KEY thing to remember when making your Pak, is that you MUST zip it up correctly, with the right path structure.

Zip files

We use zip files because the format is open; they are great for templates because the included content cannot be overwritten; they are easy to make (by us or you!); there are many 3rd party tools (some free) to create them; they can contain a directory structure; packaged content can be anything and is compressed; they keep content nicely organised - and zip files are easy to transfer!

Pak Content

The multimedia content in Paks can be audio, MIDI, generative music & other kinds of files as well as other elements such PSE Sound Networks (.tg), PSE FX Networks (.fxm), Noatikl & Mixtikl files, images etc.

The Pak elements are the things that you need to include in a Pak to make it work, the combination of which depends on what kind of Pak you are wanting to make.

Tip: Mixtikl includes Tiklpaks of both of the types below. The best thing to do before you head off to start making your own Paks is to get the add-on Tiklpaks (all Construction Kit Paks) and have a look at some of them and see the elements they include (just unzip the ones you are interested in).

Construction Kit Pak

An integrated collection of content sharing the same tempo and root that you want to appear in the Pak list and that you want to mix together out of the box e.g. all elements from a song chorus.

Example Construction Kit Paks

The LoopMix1 (loopmix1_tp_im.zip) and the GenMix1 (genmix1_dmaj_im_tp.zip) paks contain varied content at the same tempo and root and is suitable for mixing together, so they are packaged as Construction Kit Paks and they show up in the Pak list.

Separates Pak

A larger collection of content all of similar type, such as Bass Loops, that you may or most likely may not want to appear in the Pak list. Content in Separates Paks is mainly for browsing for from a content cell, and then adding to a mix.

Example Separates Pak

The LoopBeats2 Pak (loopbeats2_tp_im.zip) contains only drum loops at different tempos and is packaged as a Separates Pak which does not show up in the Pak list, as the content in it is meant to be browsed for from a content cell.

Making, Selling & Distributing Paks

If you have put your own content into a Pak (i.e. YOUR Pak) and want to sell it, then fine: we won't get in the way. We don't want a cut on what is yours or even a 'format' royalty. Just set up your store or get a distributor, and away you go. Make sure first, however, that you own the content or have the necessary rights in the content to do this.

If you want to give YOUR Pak above to the community for them to use for free, then go for it. The world is ready and waiting to hear what you can do with community content!

If you don't make your own loops or sounds, you can still contribute to the community as a Pak maker/curator. There is a growing body of freely licensable Creative Commons content you could reference & use within Paks - do, of course, make sure you comply with all license terms! See [One Laptop Per Child project](#) for examples of Creative Commons licensed samples.

All we ask is that you do not call your Pak a Tiklpak or refer to your Pak as a Tiklpak. Tiklpak is the Intermorphic Pak brand, is a trademark of Intermorphic, and we reserve its use for Paks we create and distribute or sell. Thankyou!

Important Considerations

- If your Pak is to include audio loops we recommend:
 - Use 44 Khz Mono loops (either WAV or Ogg).
 - Aside from performance & footprint issues, stereo loops require twice the RAM and more processing power. We recommend being consistent, so recommend opting for mono as these can be positioned. If you have or keep the WAV masters at 44KHz stereo, then you can always use them in years to come.
 - Ogg loops are much smaller (see Pak size below), but they have to be decompressed before being loaded into memory. If you are after pure speed of loading, then it is best to stick with WAV.
- Pak Size:
 - It's up to you - but remember two things: 1) File Size - keep it down if you want to run it on mobile devices; 2. RAM - samples have to be loaded into memory to be used, and this is always scarce on mobile.

- Try to work with high quality "master" audio samples which you then edit and resample.
- For song related Paks, content will generally be 1 to 4 bars loops from the various chorus elements of a song/track (e.g. beat1, beat2, bass, keys, synth, vox1, vox2 etc) and can also include "sting" samples for "one shot" playback.
- Tempo and the content size are closely interrelated: a 1 bar 60bpm audio clip is 4 seconds in length (each beat is 1 second in length and there are 4 of them in a bar), and a 1 bar 120bpm audio clip a 2 seconds in length (each beat is 1/2 second and there are 4 of them). Therefore Paks with a slow tempo will generally be larger than those with a fast tempo!

Tools You May Need

- Noatikl: to create generative .partikl files and .noatikl files
 - Note: .partikl files contain both Noatikl file data and associated Synth/Effect definitions and ogg/dls sounds; they can be used either standalone within Noatikl, or they can be used as content for Mixtikl Mixer content cells.
- Mixtikl Desktop (Win or Mac version): to create mixtikl files, test Paks and play your mixes!
- Textpad, Notepad (or whatever): to tweak your pak.xml files (these define the tempo & key).
- Winzip (7Zip or whatever): to package-up your Paks into self-contained zip files.
- Audacity, Wavelab or similar: to create your loops and ogg files.
- Polyphontics, Awave Studio or Microsoft DLS Producer: if you need to create any DLS 1 wavetables for your PSE content.



Getting Started

The first thing you need to do for Pak creation is to make your **Pak folder**. Your Pak folder can be a folder underneath the Paks directory (e.g. paks/MyName_MyPak), or even a subdirectory underneath the Paks directory (e.g. paks/bassLoops/MyName_MyPak). The reason you might want to put it in a subdirectory is for easy browsing of content of a similar type.

First things first

Navigate on your PC to the Intermorphic Folder ([see here](#)).

Then create your **Pak folder** (MyName_MyPak)

1. Create a new folder under the Intermorphic Folder (note the lower case 'i'):

◦ e.g. intermorphic\mixtikl\paks\MyName_MyPak or;

◦ e.g. intermorphic\mixtikl\paks\bassLoops\MyName_MyPak

◦ Pak folder names must be unique and should a naming convention like "Artist_Track_Label" (or where they are just loops then "Company_LoopDescription").

- Spaces may be used in path names, but we recommend you do NOT use them - choose underscore or dash characters instead - or use CamelCase.
- This folder is displayed in the content list, so we recommend keeping it short and you may wish to use abbreviations and underscores or dashes.

2. Put (or save) all of the elements that you require into this folder.

3. You can work with and test your Pak in this folder before you create your final Pak file.

- More experienced Pak creators may wish to create a "dev" folder under the "paks" folder, and then put all Pak content development in a folder "intermorphic/mixtikl/paks/" under this. You then create your zips, using batch files, from these folders and never inadvertently overwrite or alter your master content.

4. You are ready for the next step!

Pak Elements

Pak Elements & What They're For:

Tip: Select each following heading to see full details.

pak.xml

- Defines the Pak root and tempo; allows Pak to be displayed or hidden in Pak list
- Required in Construction Kit; can be used in Separates Pak where all content share common root/pitch

This file defines the Pak base root and tempo and allows Pak to be displayed or hidden in Pak list. It is required in Construction Kits, and can be used in Separates Pak where all content shares a common root/pitch.

For a real example, see the pak.xml file in one of the [Audio Loop Collection 1](#) add-on Tiklpaks.

From the webpage, copy the text below and paste it into a new text file that you save in your MyName_MyPak folder as pak.xml. Modify the pak.xml it to suit your requirements (see below for the optional items you can delete) :

<copy text below... >

```

<pak
messagespath="intermorphic/mixtikl/paks/MyName_MyPak/messages"
tempo="135"
root="F"
scale="Major"
hidden="0"
displayname="1"
kmopenname="2"
description="3"
copyright="4"
dispscale="5"
eska="0"
path="/MyName_MyPak/"
source="yourname"
licenceURL="http://yourdomain.com/eula.html"
linkURL="http://yourdomain.com/getpaks/"
year="2010"
style="world"
instrument="drum, beats, loops"
descriptors="beats"
>
</pak>

```

<copy text above... >

Notes:

1. *messagespath*: The path to your pak messages.asm file; this will include your folder name (e.g. intermorphic/mixtikl/paks/MyName_MyPak/messages)
2. *tempo*: The tempo is the tempo for which the content is designed to be played, in terms of beats per minute.
3. *root*: The root parameter should be the root to which the media in your content is designed to be played. For example, this might be A, A#, C, Db etc.
4. *scale*: The Scale is purely informational, describing guidance as to the harmonic structure of the content within the Pak; the user considers this, and for example might not choose to play a "Minor" Pak against a "Major" Pak (but there again: they might!).
5. *hidden*: Set the value to 0 if you want the Pak to display in the Pak list (or just leave out the parameter altogether). e.g. for a Construction Kit; a value of 1 prevents it displaying in the Pak list, e.g. for a Separates Pak
6. *displayname*: DO NOT CHANGE, points to string 1 in Pak messages.asm file
7. *kmopenname*: DO NOT CHANGE, points to string 2 in Pak messages.asm file
8. *description*: DO NOT CHANGE, points to string 3 in Pak messages.asm file
9. *copyright*: DO NOT CHANGE, points to string 4 in Pak messages.asm file
10. *dispscale*: DO NOT CHANGE, points to string 5 in Pak messages.asm file
11. *eska*: DO NOT CHANGE
12. All other parameters under this (as shown in grey) are currently optional and purely informational. The reason for including the other meta information is that some day Mixtikl will be able to use these of search on then, helping you to find samples quickly.
13. WHEN MODIFYING THE XML, BE CAREFUL NOT TO ADD SPACES WITHIN DOUBLE-

QUOTE CHARACTERS (except where text). DO NOT FORGET THE FINAL CLOSING BRACES.

mixtikl.xml file

- Defines the common root and tempo; Pak will not show in Pak list
- Special use: required in Separates Pak of common root/pitch that does not include pak.xml
- Primarily for ad-hoq use and browsing of same tempo/pitch content from a content cell without first having to first create a zip, and obviating the need for separate yourfile_mixtikl.xml files for each content item - typical example would be e.g. using a directory of pre-prepared same tempo/pitch loops from a Music Magazine or sample directory

SPECIAL USE ALTERNATIVE TO PAK.XML FILE: This file tells Mixtikl about any overriding tempo, root and scale of **all** loops in this Pak, and will ensure the Pak is not displayed in the Pak list. Is only required in a Separates Pak that includes content all at the **same** tempo and root pitch, and does not contain a pak.xml file. It means you do not have to create a yourfile_mixtikl.xml file for each and every audio and music content file in the Pak.

It is primarily for ad-hoq use and browsing of same tempo/pitch content from a content cell without first having to first create a zip, foregoing the need for separate yourfile_mixtikl.xml files for each content item - typical example would be e.g. using a directory of pre-prepared same tempo/pitch loops from a Music Magazine or sample directory.

From the webpage, copy the text below and paste it into a new text file that you save in your MyName_MyPak folder as mixtikl.xml. Modify the mixtikl.xml it to suit your requirements (see below for the optional items you can delete) :

<copy text below... >

```
<?xml version="2.0"?>
<mixtikl_meta
tempo="120"
root="D"
scale="Major"
path="/MyName_MyPak/"
licenceURL="http://intermorphic.com/company/eula.html"
linkURL ="http://tiklpak.com"
source="Intermorphic"
copyright="Intermorphic Ltd"
year="2008"
style="house"
instrument="bass"
descriptors="fast, heavy, loud"
>
</mixtikl_meta>
```

<copy text above... >

Notes:

1. As for yourfile_mixtikl.xml files, except does not include the "bars" meta tag.
2. Items in grey are for the time being optional and informational.

messages.asm

- Defines how the Pak shows up in the Pak list
- Required in Construction Kit; only required for Separates Pak that needs to show in Pak list

This simple text file defines how the Pak shows up in the Pak list. It is required in both Construction Kit and Separates Paks.

For a real example, see the messages.asm file in one of the Audio Loop Collection 1 add-on Tiklpaks.

From the webpage, copy the text below and paste it into a new text file that you save in your MyName_MyPak folder as messages.asm. Modify messages.asm to suit your requirements:

<copy text below... >

```
* Copyright (C) 2013 Intermorphic Limited. All Rights Reserved.
CATALOG_START "en"
CATALOG_STRING 1, "MyName_MyPak"
CATALOG_STRING 2, "MyName_MyPak"
CATALOG_STRING 3, "MyName_MyPak using 3rd party samples."
CATALOG_STRING 4, "The Copyright statement"
CATALOG_STRING 5, "Major"
CATALOG_STRING 6, "http://www.intermorphic.com/tiklpak"
CATALOG_END "Unknown"
```

<copy text above... >

Notes:

1. Put your copyright statement here if you wish, but do not forget the "*" at the beginning
2. CATALOG_START "the locale/language for your Pak, where en is English"
3. CATALOG_STRING 1, "text shown when using Menu Open operations"
4. CATALOG_STRING 2, "text preface (e.g. XXX) shown when opening files saved by users, i.e. XXX: File Name : User Mix name"
5. CATALOG_STRING 3, "description of your content; this is not seen by the user"
6. CATALOG_STRING 4, "the copyright notice; this is not seen by the user"
7. CATALOG_STRING 5, "pak scale (e.g. major, minor); this is not seen by the user"
8. CATALOG_STRING 6, "URL-to-a-webpage-about-the-pak"; a user can be directed here to find out more by pressing the "info" button in a Mixer Cell Menu where the cell uses content from this pak
9. CATALOG_END "do not change, essential"

your files

- The content files you want in your Pak, in any combination of audio, MIDI, partikl and noatikl

formats

- Required in both Construction Kit and Separates Pak

Paks can contain audio and music files in any of the related formats supported by Mixtikl (e.g. .ogg, .mid/.midi, .par/.partikl, .noa/.noatikl, .wav, .au and even DLS 1 wavetables). For further information see the section on [Content Types](#).

For a real example, see the files in one of the [Audio Loop Collection 1](#) add-on Tiklpaks.

1. *For "Construction Kit" Paks:* Include a minimum of 12 content items (one for each of the 12 tracks), but you can include more if you want to give your Pak users "bonus" items. We recommend 15-16 items.
2. *For "Separates" Paks:* Include as many content items as you like, but remember that there is limited file storage on mobile devices, and the more items you include, the more there is to browse (so it can take longer to find something).
3. Name your content files following the [File Naming Convention](#). Check Mixtikl's included Tiklpaks for examples of this.
4. Ensure that any loops used are a minimum of 1 bar length (if they are short sounds you can pad them out with silence); loops have the correct number of sample points for the respective bar lengths; they all loop cleanly.
5. You will need to normalise any audio sample used in such a way that when 9-10 of them are playing simultaneously in Mixtikl at say 80% Mixtikl max volume level there is no audible distortion. This might mean normalising to e.g. -2db or somesuch factor. Once this factor has been established, use it across all your Paks.
6. Content should be 1-4 bars in length, melodic elements being better as multibar (they more easily bear repetition that way; some beats can be 1 bar, but others should be longer). However, 2-4 bar samples can be large, so use sparingly. Generative content can play for ever :).
7. We recommend that content Master files should be 44KHz WAV files (mono or stereo depending on what you are working with).
8. Convert your .wav audio samples to .ogg using e.g. Oggdrop (quality setting 4, approx 128kbps). This should give you optimum sound quality, and file size.
9. Please bear in mind the overall [recommended Pak sizes](#), and note that the Pak tempo will have a bearing on the size of the .Ogg files. Low frequency loops (e.g. Bass) tend to end up smaller than those with high frequencies (e.g. hi hats). You may need to experiment here, also with bar lengths to see what can fit.
10. All samples need to be prepared carefully so that the loop points are set correctly and there is no noticeable audio artifacts (glitches) when the sample loops. You should test all samples in test mixes. Also, you should ensure that the ogg encoded versions do not any clipping.
11. You should only include loops of the same scale in ANY Pak.

yourfile_mixtikl.xml files

- Meta file that defines content item tempo & root
- Required in a Separates Pak for every content item that *differs* from the pak.xml or mixtikl.xml root/pitch values

SEPARATES PAK: This text file tells Mixtikl about the tempo, root and scale of ONE content file,

together with other meta information. It is only essential to have one for a content item when it does not share the common features of the [pak.xml](#) or [mixtikl.xml](#) file. It can also be used in a Construction Kit if you have a content item that is at a different root and tempo to that defined in the Pak.xml.

"**yourfile**" is shorthand for the name of the related [content file](#), without its file extension. Eg. if one of your content files was called **d_2-kick2_140d.ogg**, then this corresponding file is called **d_2-kick2_140d_mixtikl.xml**.

From the webpage, copy the text below and paste it into a new text file that you save in your MyName_MyPak folder as e.g. bass_mixtikl.xml. Modify this file to match up with the corresponding content item :

<copy text below... >

```
<?xml version="2.0"?>
<mixtikl_meta
tempo="81"
root="D"
scale="Major"
path="/MyName_MyPak/"
licenceURL="http://yourdomain.com/eula.html"
linkURL="http://yourdomain.com/getpaks/"
source="yourname"
copyright="yourname"
year="2010"
style="world"
instrument="drums"
bars="1"
descriptors="beats"
>
</mixtikl_meta>
```

<copy text above... >

Notes:

1. *tempo*: The tempo is the tempo for which the content item is designed to be played, in terms of beats per minute.
2. *root*: The root parameter should be the root at which this content item is designed to be played. For example, this might be A, A#, C, Db etc.
3. *scale*: The Scale is purely informational, describing guidance as to the harmonic structure of the content item within the Pak; the user considers this, and for example might not choose to play a "Minor" Pak against a "Major" Pak (but there again: they might!).
4. All other parameters under this (as shown in grey) are currently optional and purely informational. The reason for including the other meta information is that some day Mixtikl will be able to use these of search on then, helping you to find samples quickly.
5. WHEN MODIFYING THE XML, BE CAREFUL NOT TO ADD SPACES WITHIN DOUBLE-QUOTE CHARACTERS (except where text). DO NOT FORGET THE FINAL CLOSING BRACES.

yourmix.mixtikl files

- The mix file(s), which might even be empty, required for every Pak that shows in the Pak list
- Required only in a Construction Kit Pak

The "mix file" is a text file that list all the loops and sound FX used in a mix, as well as the mix tempo, root, key mix information etc. When you save your mix, you are saving a mix file, e.g. demo1.mixtikl or mymix1.mixtikl.

For a real example, see the mix files in one of the [Audio Loop Collection 1](#) add-on Tiklpaks.

Note: You must have at least one these in a Construction Kit Pak, but you do not need one in a Separates Pak that does **not** display in the Pak list.

Note: NO AUDIO or MIDI etc DATA is saved in a mix file, so you may share your mix files.

Note: Most Tiklpaks/Paks will be governed by a Licence Agreement, which will mean you will not be allowed to share the samples/loops in the Pak (in relation to Intermorphic Tiklpaks, see the [Intermorphic Tiklpak EULA](#)).

1. Create an empty text file, paste into it the text below, and save it in your Pak directory (e.g. MyName_MyPak) as e.g MyMix.mixtikl

<copy text below... >

```
<?xml version="1.0"?>
<mixtikl>
  <version value="2"> </version>
<global type="0" tempo="60" root="D" msmt="2" msss="0" filename="MyMix.mixtikl"
pak="MyName_MyPak" >
</global>
  <track id="0" midivol="86">
    <cell id="0"> </cell>
    <cell id="1"> </cell>
    <cell id="2"> </cell>
    <cell id="3"> </cell>
  </track>
  <track id="1" midivol="86">
    <cell id="0"> </cell>
    <cell id="1"> </cell>
    <cell id="2"> </cell>
    <cell id="3"> </cell>
  </track>
  <track id="2" midivol="86">
    <cell id="0"> </cell>
    <cell id="1"> </cell>
    <cell id="2"> </cell>
    <cell id="3"> </cell>
  </track>
  <track id="3" midivol="86">
    <cell id="0"> </cell>
    <cell id="1"> </cell>
    <cell id="2"> </cell>
    <cell id="3"> </cell>
  </track>
  <track id="4" midivol="86">
    <cell id="0"> </cell>
    <cell id="1"> </cell>
    <cell id="2"> </cell>
    <cell id="3"> </cell>
  </track>
  <track id="5" midivol="88">
    <cell id="0"> </cell>
    <cell id="1"> </cell>
    <cell id="2"> </cell>
    <cell id="3"> </cell>
  </track>
  <track id="6" midivol="86">
    <cell id="0"> </cell>
    <cell id="1"> </cell>
    <cell id="2"> </cell>
    <cell id="3"> </cell>
  </track>
  <track id="7" midivol="86">
    <cell id="0"> </cell>
    <cell id="1"> </cell>
    <cell id="2"> </cell>
    <cell id="3"> </cell>
  </track>

```

```

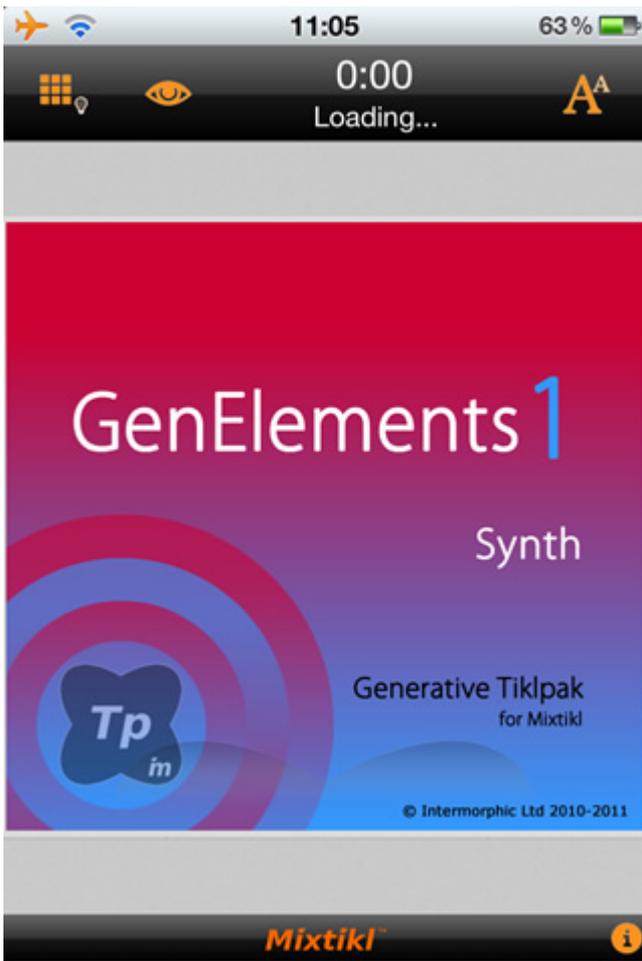
</track>
<track id="8" midivol="86">
  <cell id="0"> </cell>
  <cell id="1"> </cell>
  <cell id="2"> </cell>
  <cell id="3"> </cell>
</track>
<track id="9" midivol="86">
  <cell id="0"> </cell>
  <cell id="1"> </cell>
  <cell id="2"> </cell>
  <cell id="3"> </cell>
</track>
<track id="10" midivol="86">
  <cell id="0"> </cell>
  <cell id="1"> </cell>
  <cell id="2"> </cell>
  <cell id="3"> </cell>
</track>
<track id="11" midivol="86">
  <cell id="0"> </cell>
  <cell id="1"> </cell>
  <cell id="2"> </cell>
  <cell id="3"> </cell>
</track>
</mixtikl>

```

<copy text above... >

2. Start Mixtikl (close and re-open already open)
3. Select Mixer from the menu
4. From the Pak list select your Pak "MyName_MyPak"
5. Create a mix
 1. Set the mix Tempo and Root from the tempo/root button on the top toolbar.
 2. For tracks 1-12 select each of the Mixer Cells in Sections 1 to 4, and add in the content element you want from your Pak. Tap/hold the cells to make them loop (you will see the loop symbol), as you wish, and/or lock one of the sections itself (bottom toolbar).
 3. For any tracks that you want to be "1 shot" loops, select the cell in column 7 for that track, and tap until it shows as an orange dot with an exclamation mark; sequenced cells are represented by an orange arrow and loop cells with just an orange loop symbol.
 4. Adjust any of the track volumes and pans, as necessary (column 1), and mute or solo settings (column 4).
 5. To add global FX to the mix (if required), select your FX as a global FX (top button on column 7). You can add track level FX by selecting an FX unit in column 7 for that track.
 6. Select Menu > Save, and name your file.
 7. You can include as many .mixtikl files as you like in a Pak.
6. Now that you have created your customised .mixtikl file, delete the placeholder mix file, e.g MyPakTest.mixtikl and replace with this file.

- The Pak splash screen that displays as the Pak is loading
- Optional



OPTIONAL: You can include an image in your Pak that is displayed when loading or creating a mix based on your Pak (your Pak must be installed).

For a real example, see the splash.png file in one of the [Audio Loop Collection 1](#) add-on Tiklpaks.

File name: "splash.png"

Recommended size: 640 × 614 pixels (optimally fits all skin sizes), although it can be larger.

Recommended bit depth: 24-bit indexed png (to make sure it looks good on larger screens like iPad or iPhone 4 "retinal" display).

Note: The image is stretched to fill a skin-specific area which depends on the screen size/skin that Mixtiki is running at.

licence.txt

- The Licence file that accompanies the Pak
- Optional

OPTIONAL: The license that you want to accompany the content in your Pak. The user can see the license text for any mix file created from this (installed) Pak from Menu > Help > Licenses > Currently Open Pak

For a real example, see one of the [Audio Loop Collection 1](#) add-on Tiklpaks.

From the webpage, copy the text below and paste it into a new text file that you save in your MyName_MyPak folder as license.txt. Modify license.txt to suit your requirements:

<copy text below... >

```
<a href="help:help">QUICK HELP
<hr>
<b>Your license name
Your license text...
<a href="help:license">TOP ^
```

<copy text above... >

Content Types

Mixtikl allows the mixing together of many different audio and music files, namely "content". This content can be in a wide range of file formats, from audio clips to MIDI files and beyond. To keep things simple, we refer to any item of content in any format simply as "content" or "content item", but this section gives some more information on the different formats.

Mixtikl's content flexibility allows you to be creative in ways that both suits the capabilities of your device and that match your personal preferences – namely how much memory you have on your phone, and how much space you want to set aside for storing content or recordings of mixes you might make.

Audio Content

Audio content is used where maximum sonic impact is required. The reason is that an audio sample (a short clip) contains a great deal of high quality pre-processed audio information (such as a real voice, electric guitar riff, orchestral theme etc). However, the downside is that memory usage is higher than for other content types (for both storage and operation). A typical 1 bar audio sample (in compressed Ogg Vorbis format, 48Kbps) is around 15Kb, but in order to be mixed it must first be expanded into your device RAM memory, where it might be >4 times larger!

Audio formats supported (file extensions capitalised for consistency):

- Ogg Vorbis (compressed audio format) – .OGG
- WAV (PCM and ADPCM) - .WAV (8 or 16 bit only at present)

Note: When using audio content, there are a number of factors that determine the size of the content item. The key ones are the tempo of the mix and how many "bars" there are in each item of content (a "bar" is a musical term which refers most commonly to 4 beats, and is the normal minimum size for a content item), and then for each item the sample rate, bit depth and whether the sample is stereo or mono.

Tempo is to do with how many beats per minute (bpm) you have in your mix, which is defined in each Pak. Tempo and the content size are closely interrelated in that a 1 bar 60bpm audio clip is 4 seconds in length (each beat is 1 second in length and there are 4 of them in a bar), and a 1 bar 120bpm audio clip a 2 seconds in length (each beat is ½ second and there are 4 of them).

MIDI Content

MIDI content is an electronic version of sheet music (in that it only contains note playback information), and it is played through the Mixtikl integral MIDI synthesizer. MIDI content has the advantage of small size, and so uses far less device memory, but it does not have the sonic impact and richness of the much larger audio content. A typical 1 bar MIDI riff is around 1Kb.

MIDI formats supported (file extensions capitalised for consistency):

- SMF (Standard MIDI file, type 0 or 1) - .MID/.MIDI/.KAR

Advanced Content

Various advanced content options are available within Mixtikl, and these allow greater use of the device as a music "computer", creating rich sounds from small components. This kind of content is typically in .partikl format, and it allows the use of real software synthesisers, FX and music engines. A 1 bar .partikl file can be just a few Kb in size, but can be set up to allow the creation of hundreds of minutes of varied and sonically rich content.

PSE content is authored with Noatikl 2, and can also include audio samples, for which the comments above related to audio content apply. Partikl files may contain any combination of DLS file data, audio data (Ogg, Au and/or WAV), Noatikl files, MIDI files and PSE Modular Synth and FX network settings. Noatikl files are generative content, meaning that they are composed for you in real-time by the Noatikl trans-generative music engine.

Advanced formats supported (file extensions capitalised for consistency):

- Noatikl - .NOATIKL or .NOA
- Partikl - .PARTIKL or .PAR

SF2/DLS 1 Wavetable

The PSE multi-synth can be used to hook up MIDI or advanced content to a Wavetable of type SF2 (SoundFont) or DLS 1. The Wavetable can either be in one of the pre-installed Paks, or included in a Pak you might have made. Either way, it has to be installed to your device and PSE must know the path to it.

Being able to target a SF2 or DLS 1 Wavetable via PSE means that MIDI playback, via the MIDI synth in PSE, can use some cool sounds and with the smallest performance overhead - all you need is the Wavetable!

Multi-bar Content

This is content in any of the above forms that plays for more than 1 bar. It can be even more effective than content of 1 bar length as it provides more continuity and variation over a longer period of time. Mixtikl is very powerful in that mixes can utilise not only 1 bar content, but also multi-bar content. Mixtikl intelligently caters for content of non-full bar length (e.g. 2 ¼ bars). When the content is not in a Tiklpak it will not simply loop the content, causing mix synching problems, but will instead pad it out with silence until it reaches the next bar boundary. Content that *is* in a Tiklpak is time- stretched/shrunk automatically to the nearest bar multiple.

The "mix file" itself

When you add content into a mix, this information is saved to a special "mix file" format called ".mixtikl". It is an XML format that stores all the information about what content is used in the mix and where, together with sound FX used etc.

Add-on Paks and Content

There is a lot that can be used in Mixtikl. [See here](#) for what is available!

File Names

File Naming Convention

The file naming convention used by Mixtikl is of particular relevance to Paks that contain a lot of content as it helps to group similar content in list displays (e.g. content list).

For real examples, see the files in the GenMix1 Pak (genmix1_dmaj_im_tp.zip), GenMix5 Pak (genmix5_dmaj_im_tp.zip) and LoopBeats2 (loopbeats2_tp_im.zip) that are pre-installed with Mixtikl.

TIP: If you have a loop, e.g. a drum loop, that you want never to be pitch shifted (even if it can be tempo-stretched), then use the "d_" prefix below.

File Naming Convention: **track_bars-contentName-aksmo.type**

e.g. **d_2-kick2_140d-o.ogg**

track_

Choose one of 5 single character values followed by an "underscore" (the user never sees these letters):

- **d_** (drums)
- **b_** (basses)
- **c_** (chords/structure)
- **l_** (leads/arps)
- **u_** (fx/vox/custom/stings)

bars-

The number of bars followed by a "dash" (e.g. "4-")

- **OPTIONAL** - we generally do not use this identifier, but it is available for you if it helps you, i.e. you can see in a content cell how long the loop will play for, and you can also visually track its progress with the moving content cell "mote".
- 0 is a special case that indicates content that will play for a very long time, which as far as the application is concerned, effectively means forever. This kind of content is generative in nature, and the generative material is authored with Noatikl. Noatikl content can be set up to play for a maximum of 9 hours, for example!
- If the content is only 1 bar long, then you can ignore this, i.e. track_ContentName-aksmo.type.

contentName

The name shown in a content cell. Using this convention means content is shown in the easiest, briefest and most easily understandable way in both the content cells and the content list. The contentName can include the underscore character.

Recommended syntax is :

```
"sampleTypesampleNumber_TempoRoot_OtherInfo" (e.g. kick1_140d_OtherInfo for Kick Drum 1).
```

- **sampleType** of 3-4 characters

- "**snar**" for Snare Drum
- "**syn**" for Synth
- "**prc**" for percussion
- "**kick**" for bass drum
- "**hhat**" for hi hat
- "**cym**" for cymbal
- "**vox**" for voice
- "**chrd**" for chords
- "**bass**" for bass etc
- **sampleNumber**
 - the variant, e.g. **1, 2, 3** etc.
- **_TempoRoot**
 - The tempo and root note e.g. **_140d**
- **_OtherInfo**
 - Such as the details of the original sample name if the sample is renamed (e.g. 7WDZGSpice), the Pak name (e.g. loopbeats1) and the pak maker (e.g. _IM)

-aksmo

Preceded by a "dash", this is an advanced set of identifiers used by content authors to identify specific content types. If you are using audio or MIDI content only, then you can ignore these identifiers (i.e. track_bars-ContentName.type).

- **a** - the identifier for "advanced content", which is content constructed in such a way that it requires more than normal usage of computer processing to play. An example of this being content that uses modular synthesis to generate the sounds, or has heavy use of multi-layered audio samples. This content will display as red in the content list.
- **k** - used for content that uses the Noatikl Music Engine. This content is typically generative, in that music is continuously created on-the-fly.
- **s** - the identifier for content that uses sounds created through modular synthesis. 's' labelled content is normally labelled "advanced" as well.
- **m** - MIDI based content.
- **o** - Content that uses compressed audio samples, such as sample in Ogg Vorbis format.

type

This is the file extension, such as **.partikl**, **.noatikl**, **.mid**, **.ogg** or **.wav** etc. The file extension determines what color the content will show up in the Mixtikl content list.

- Audio content displays as blue (Ogg, WAV);
- MIDI content displays as black (MIDI, MIDI partikl)
 - in the content cell it is also indicated with a small black and white piano keyboard;
- Advanced content (as noted above) displays in dark red (.partikl, .noatikl)

Zipping

Creating your Pak.zip file

You can use your preferred Zip file utility to create your Pak. The KEY thing to remember is that you MUST get the path information correct for your Pak to load. Some Zip file utilities make it easy to include the right

path information, some don't. Some you will need to use a Command line option to do this, especially if you create your Paks in a different folder to the one required for a Pak to load.

For a real example, see one of the [Audio Loop Collection 1](#) add-on Tiklpaks.

- It is **essential** that the following path (off your hard disk root, e.g. C:) is used and included in the Zip file for **all** your content in the Pak: e.g.

```
intermorphic\mixtikl\paks\MyName_MyPak\
```

- If you are making a Separates Pak you can included the Pak in a sub-folder under the paks directory, e.g.

```
intermorphic\mixtikl\paks\MySamples\MyName_MyPak\
```

- The path(s) above **MUST NOT** include any other path information before "intermorphic" or the Pak simply will not work.
- *TIP:* More experienced Pak creators may wish to create a "dev" folder under the "paks" folder, and then put all Pak content development in a folder "intermorphic/mixtikl/paks/" under this. You then create your zips, using batch files, from these folders and never inadvertently overwrite or alter your master content.
- Once zipped, copy (or move) the Pak zip file (e.g. MyPak.zip) you have just made to the [Intermorphic Folder](#)
- Relaunch your Intermorphic App, and you should be able to use your new Pak!

Windows Users - Tips for Zipping Paks

There are a number of zip tools you can use on Windows, including [7Zip](#) and [WinZip](#) etc.

1. Approach 1 - Using Latest version of WinZip (e.g. > 12.x ...)

- Imagine you have the content for pak you're creating in c:\this\that\intermorphic\mixtikl\paks*
- Add the folder(s) you want from Windows Explorer to a zip - you should include full path info
- To fix the path info in the zip file, to be relative... i.e. to remove the unwanted c:\this\that path information then, in WinZip, select the "Folders" view.
- In the left hand pane, move to the folder above which you wish to preserve the relative path (i.e. to c:\this\that in this case).
- Drag the intermorphic folder from the right pane, to the top/root of the zip file structure in the left pane.
- Your file/folder paths are now fixed!

Mac Users - Tips for Zipping Paks

There are a number of zip tools you can use on Mac, including [Stuffit](#) and [BetterZip](#)

1. Approach 1 - Using Terminal to zip up your Pak

- Launch Terminal (from Finder, under Applications > Utilities), and type the following, where MyName_MyPak is the name of your Pak folder:

```
cd Documents
zip -r MyName_MyPak.zip intermorphic/mixtikl/paks/MyName_MyPak/*
```

Note that if you have moved your Documents folder somewhere else, you will have to move there instead with something like this:

```
cd /Volumes/Drive/Documents
zip -r MyName_MyPak.zip intermorphic/mixtikl/paks/MyName_MyPak/*
```

- Reload Mixtikl and check your Pak is OK (we suggest you temporarily move your Pak folder so that ONLY the Pak zip gets picked up (for testing) and not your unzipped Pak folder!)

2. Approach 2 - Using a .sh (batch) file to zip up your Pak

- Creating Pakzips with a batch file(s) is best if you are creating a lot of Paks, or just doing it again and again and don't want to type in the commands above every time. We don't want to go into another tutorial on how to use .sh (batch files), but you need to create a text file, and then rename it to something.sh and then set up the file association so that it can run as a batch file (none of this is straightforward it seems!). Suffice to say, we do not recommend creating / using batch files unless you know what you are doing!
- If you use a rm command (remove), be very careful.
- What follows is a batch file that checks if a zip file is there, removes it, changes to a master Pak directory, and zips up a particular pak and puts it in a separate zips folder (e.g. IMZips) where you can then later copy your Pak from to the correct intermorphic/mixtikl/paks/ directory for use in Mixtikl.

```
#!/bin/bash
cd ~/Documents
touch ~/IMZips/TiklPaks/genmix1_dmaj_im_tp.zip
rm ~/IMZips/TiklPaks/genmix1_dmaj_im_tp.zip
cd ~/Documents/intermorphic/_TIKLPK_DEV_MASTERS/
zip ~/IMZips/TiklPaks/genmix1_dmaj_im_tp.zip intermorphic/mixtikl/paks/IM_GenMi
xl_DMaj/*.*
```

- You can also append the zip line with arguments that prevent some files getting added, e.g.

```
-x \*_MACOSX -x \*\.DS_Store -x \*Thumbs.db
```

Useful Links

- [FREE Tiklpaks](#)
- [Tiklpak PDF Guide](#)

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