Payday2FontTools User Manual

Payday2FontTools reads the dds font generated by BMFont and combines it with stock Payday 2 font to patch up missing symbols (e.g. the assault padlock and the small ghost icon). It allows you to select your own custom fonts for Payday 2.

Q & A

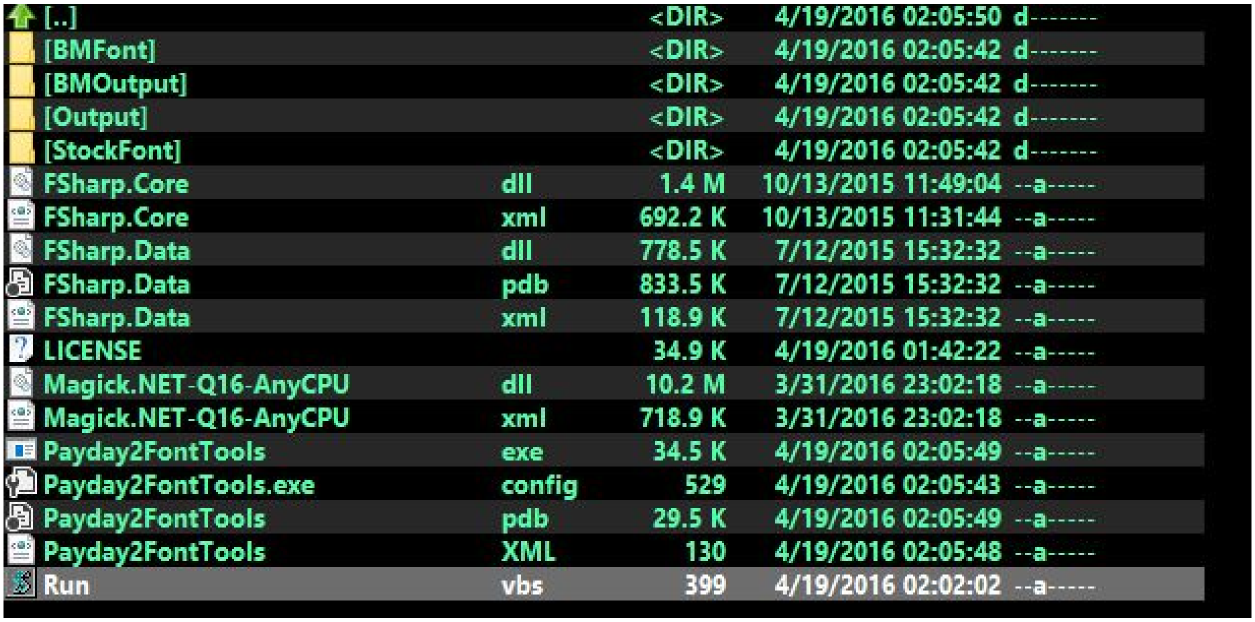
1. **Do I need this tool at all?**
   Probably not. If you don't care modifying font for Payday 2, or if you don't need to merge the output of BMFont and the stock font, you don't need this. In fact, if your font does not need to support the ghost symbol, the padlock etc, the tool created by **Luffy - still gone** (download link) is a better choice.
2. **What if I want to hack the font myself?**
   Grab a hex editor and go for it! The guide from **MaxShouldier** is very good starting point. In fact both this tool and the Dissel Font Tool created by Luffy are based on this guide.
3. **What is the possible use case?**
   Localize Payday 2 to your localization that contains characters that are not supported by the game's font. Or you want to customize the look of Payday 2.

System Requirement

Payday2FontTools on runs on 64 Windows 7 or later. I may be able to make it support Linux and OSX later but sorry for the inconvenience for now.

Folder Structure

The structure of the tool looks like as follows.

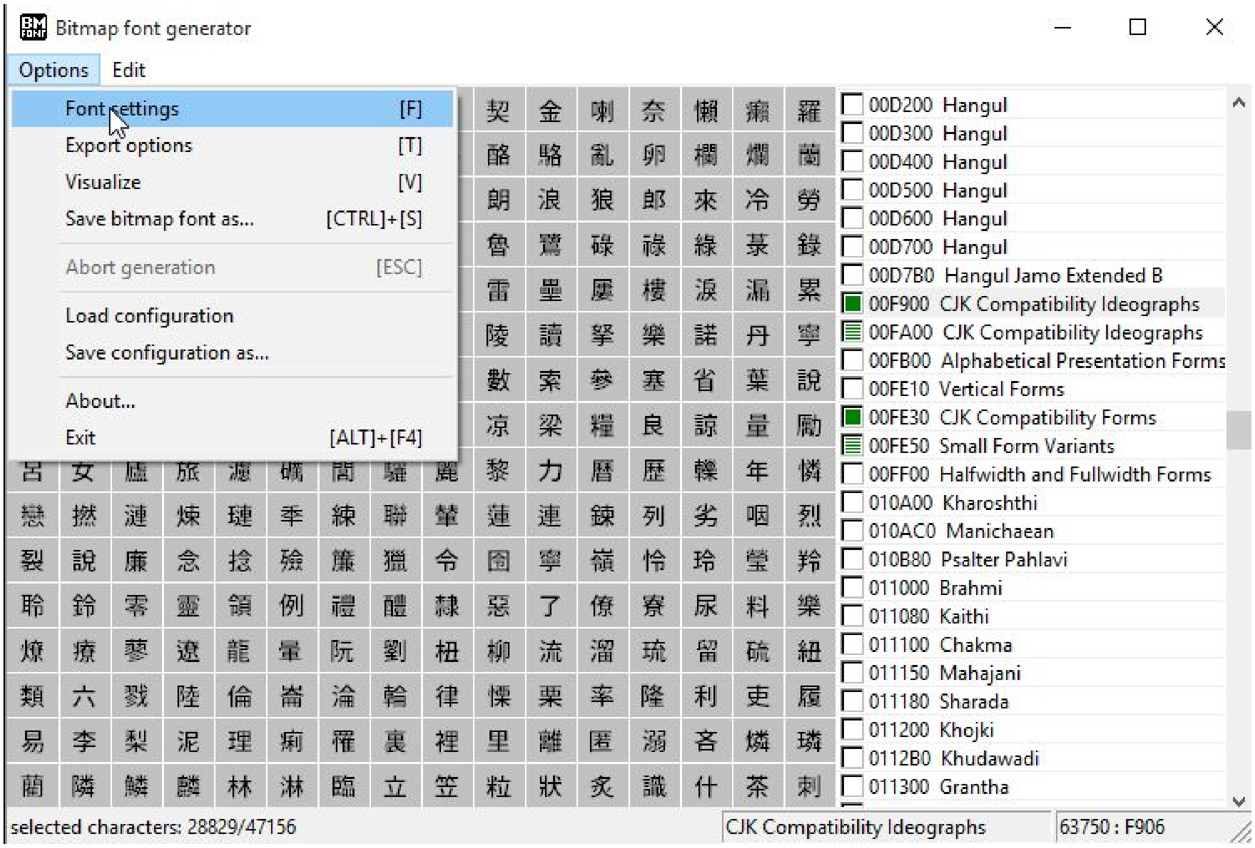


```
[..]                                      <DIR>    4/19/2016 02:05:50  d-------
[BMFont]                                  <DIR>    4/19/2016 02:05:42  d-------
[BMOutput]                                <DIR>    4/19/2016 02:05:42  d-------
[Output]                                  <DIR>    4/19/2016 02:05:42  d-------
[StockFont]                               <DIR>    4/19/2016 02:05:42  d-------
FSharp.Core                  dll          1.4 M   10/13/2015 11:49:04  --a-----
FSharp.Core                  xml        692.2 K   10/13/2015 11:31:44  --a-----
FSharp.Data                  dll        778.5 K    7/12/2015 15:32:32  --a-----
FSharp.Data                  pdb        833.5 K    7/12/2015 15:32:32  --a-----
FSharp.Data                  xml        118.9 K    7/12/2015 15:32:32  --a-----
LICENSE                                  34.9 K    4/19/2016 01:42:22  --a-----
Magick.NET-Q16-AnyCPU        dll         10.2 M    3/31/2016 23:02:18  --a-----
Magick.NET-Q16-AnyCPU        xml        718.9 K    3/31/2016 23:02:18  --a-----
Payday2FontTools             exe         34.5 K    4/19/2016 02:05:49  --a-----
Payday2FontTools.exe         config         529    4/19/2016 02:05:43  --a-----
Payday2FontTools             pdb         29.5 K    4/19/2016 02:05:49  --a-----
Payday2FontTools             XML            130    4/19/2016 02:05:48  --a-----
Run                          vbs            399    4/19/2016 02:02:02  --a-----
```

The BMOutput folder is where you are supposed to put the BMFont-generated files. Output is the folder where the result goes. You should put the font files from the game (you should be able to get them in asset/extract/fonts folder after unpack the bundles using BundleTool). Also, please rename the .texture to .dds. In short, typically, there should be those files inside assets/extract/font that impacts localization: **font_small.texture, font_small.font, font_medium.texture, font_medium.font, font_large.texture, font_large.font** and you should see those fonts in StockFont after copy and renaming: **font_small.dds, font_medium.dds, font_large.dds, font_small.font, font_medium.font, font_large.font**.

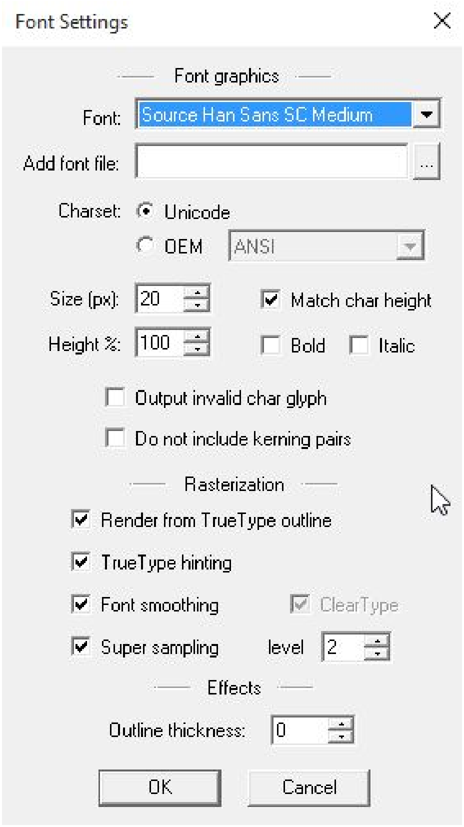
BMFont

BMFont is a free and open source font making tool. It’s located in BMFont folder. The UI looks as follows:



The important selections are: Font settings, which sets the font properties; Export options, which controls how the font should be exported; Save bitmap font as…, which actually does the export.

In Font settings, the properties are:



Font Settings

Font graphics

Font: Source Han Sans SC Medium

Add font file:

Charset: ● Unicode

○ OEM ANSI

Size (px): 20 ☑ Match char height

Height %: 100 □ Bold □ Italic

□ Output invalid char glyph

□ Do not include kerning pairs

Rasterization

☑ Render from TrueType outline

☑ TrueType hinting

☑ Font smoothing ☑ ClearType

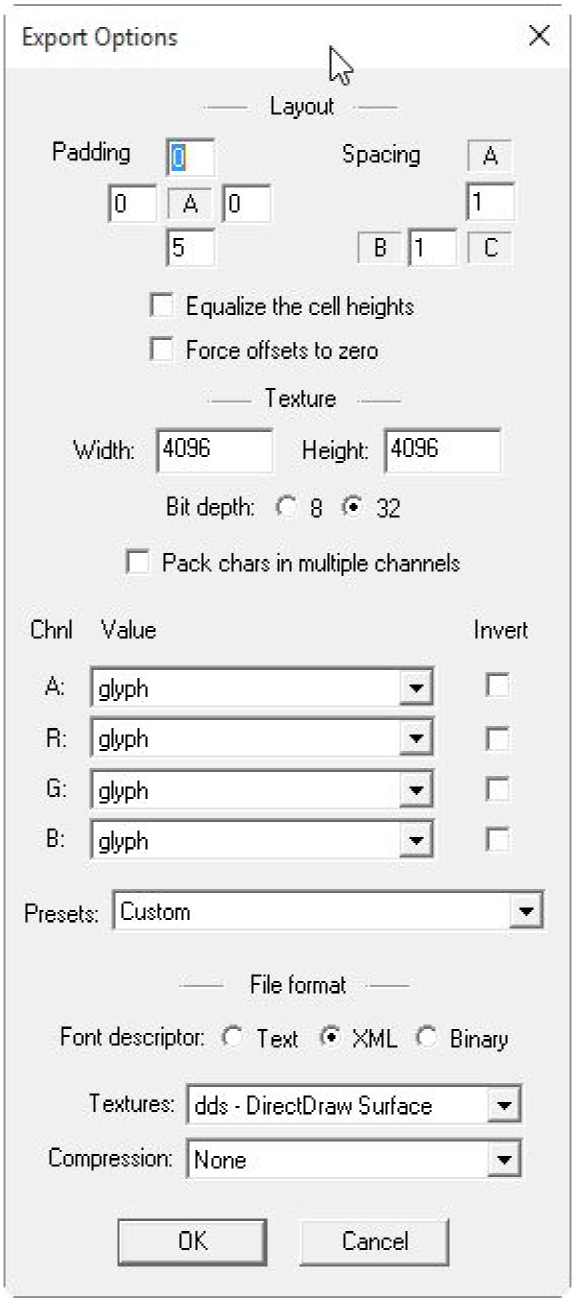
☑ Super sampling level 2

Effects

Outline thickness: 0

Font: Your desired font.
Size: The font size in pixel. My recommendation iis, if you want to make font_small file, you should probably consider 15px, for font_medium, it should be 20px, for font_large, you'd expect it to be 25px or more. But do note that the final file size increases with the font size.
Then, Rasterization controls how the font is rendered. Select the options as the image. You could increase the super sampling level to 4 if you have a good CPU.

After doing those, you should be able to mark the characters you need in the main UI (in the image above). The right hand side list lets you select font of a group, the left part allows you to mark precisely which one in each group you want.



Export Options

Layout

Padding: 0 / 0 A 0 / 5

Spacing: A / 1 / B 1 C

□ Equalize the cell heights

□ Force offsets to zero

Texture

Width: 4096 Height: 4096

Bit depth: ○ 8 ● 32

□ Pack chars in multiple channels

Chnl	Value	Invert
A:	glyph	□
R:	glyph	□
G:	glyph	□
B:	glyph	□

Presets: Custom

File format

Font descriptor: ○ Text ● XML ○ Binary

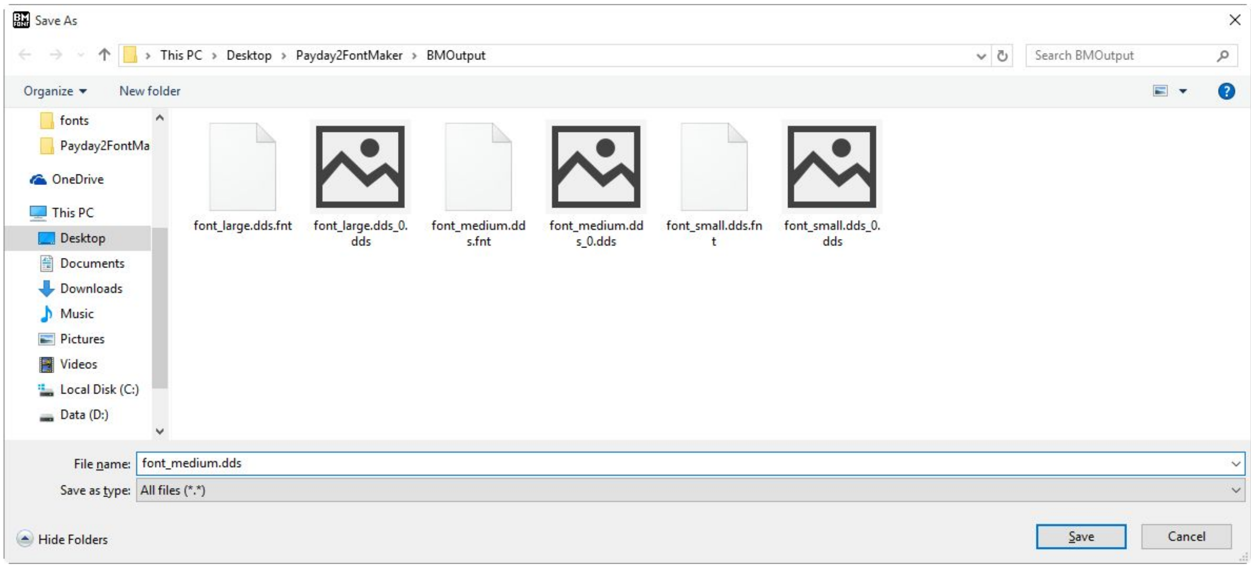
Textures: dds - DirectDraw Surface

Compression: None

Then it comes to the export. Padding and spacing controls how the characters are layed out. You could keep it to the default 0 for padding and 1 for spacing.

The width and height controls the size of the output image file. Due to limitation (and laziness of mine), you should keep each exported font in one file without paging, which means you should be smart with setting the size. Typically, 4096 x 4096 is way more than enough. But you can always increase it to 5K x 5K or even more.

Bit Depth, select glyph for better rendering. Then file format, select XML for descriptor and dds for textures. Compression level is unimportant.



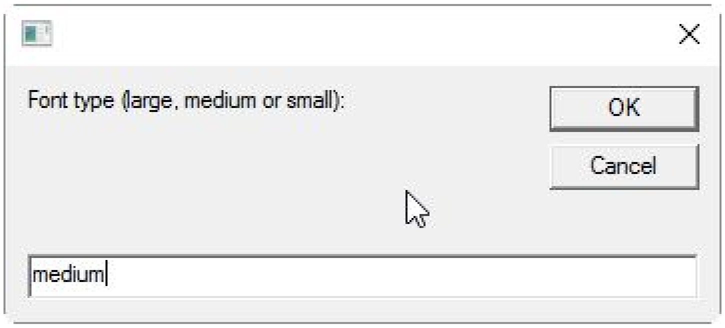
File name: font_medium.dds

Save as type: All files (*.*)

Then select export. Please, set the BMOutput as export folder, and type the FULL font name in File name section (for instance, font_medium.dds, don't omit the .dds!). You should see the exported file with names the same way in the above image.

Payday2FontTools

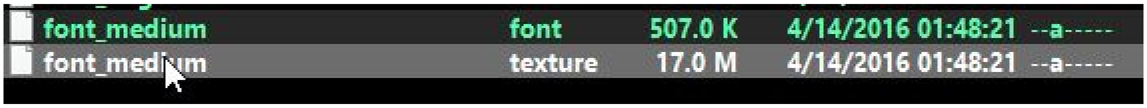
Then the easy part, double click Run.vbs, and type the font you want to make. For example, for font_large, just type large. Click OK and wait for some time. It shouldn't give any error. The first time this executable runs, it's going to take ~20s. It should be faster since then.



Font type (large, medium or small):

medium

Go to Output folder, copy them to: assets/mod_overrides/<your mod name>/fonts and you are all set.



```
font_medium      font      507.0 K   4/14/2016 01:48:21  --a-----
font_medium      texture    17.0 M   4/14/2016 01:48:21  --a-----
```

Related Materials

1. Payday 2 font file format: LastBullet

2. BMFont: http://www.angelcode.com/products/bmfont/
3. MagickNET: https://magick.codeplex.com/
4. FSharp, the language I use to write this tool: http://fsharp.org/
5. FSharp.Data: http://fsharp.github.io/FSharp.Data/
6. **Luffy - still gone**’s easier to use tool: download link