The `tex4ebook` package

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Contents

1 Introduction

`TeX4ebook` is bundle of Lua scripts and `LaTeX` packages for conversion of LaTeX files to ebook formats, for example `epub`, `mobi` and `epub3`. `tex4ht` is used as conversion engine.

Note that while `mobi` is supported by Amazon Kindle, most widespread ebook reader, it doesn't support `mathml` and this means that math must re represented as images. The same is true for `epub`. This is not a good

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thing, especially for inline math, as you may experience wrong baselines. If your ebook contains math, the only correct solution is to produce `epub3`, as it supports `mathml`. The issue with `epub3` is, that majority of `e-ink` ebook readers doesn't support this format, reader applications exists mainly for Android and Apple devices. For books which contains mainly prose, all formats should be suitable, but `epub3` supports most features from web standards, such as `CSS`.

As with `tex4ht`, the emphasis is on conversion of document's logical structure and metadata, basic visual appearance is preserved as well, but you should use custom configurations if you want to make the document more visually appealing. You can include custom `CSS` or fonts in configuration files.

1.1 License

Permission is granted to copy, distribute and/or modify this software under the terms of the LaTeX Project Public License, version 1.3.

2 Usage

Run on the command line:

```
tex4ebook [options] filename
```

You don't have to modify your source files unless you want to use commands defined by `tex4ebook` in the document, or when your document uses some unsupported package like `fontspec` (see details bellow how to solve this issue).

If you want to use `tex4ebook` commands, add this line to your document preamble:

```
\usepackage{tex4ebook}
```

but it is optional. You shouldn't need to modify your TeX files

2.1 Available commands

- `\coverimage{coverimage.name}` - include cover image to the document.

3 Command line options

-c,--config specify custom config file for `tex4ht`

example config file: File `sample.cfg`

```
\Preamble{xhtml}
\CutAt{section}
\begin{document}
\EndPreamble
```

```
 run
```

```
 tex4ebook -c sample filename.tex
```

This config file will create `xhtml` file for every section. Note that this behaviour is default.

-e,–build-file (default nil) Specify make4ht build file[1]. Defaulf build file filename is `filename.mk4`, use this option if you use different filename.

-f,–format (default epub) Output format. epub, epub3 and mobi are supported.

-l,–lua Runs htlualatex instead of htlatex.

-m,–mode (default default) This set `mode` variable, accessible in the build file. Default supported values are `default` and `draft`. In `draft` mode, document is compiled only once, instead of three times.

-r,–resolution Resolution of generated images, for example math. It should meet resolution of target devices, which is usually about 167 ppi.

-s,–shell-escape Enable shell escape in htlatex run. This may be needed if you run external commands from your source files.

-t,–tidy process output html files with `HTML tidy` command[2].

-v,–version print version number

4   Configuration

`tex4ebook` uses `tex4ht`[3] for conversion from LaTeX to html. `tex4ht` is highly configurable using config files. Basic config file structure is

```
\Preamble{xhtml, comma separated list of options}
...
\begin{document}
...
\EndPreamble
```

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[1] https://github.com/michal-h21/make4ht#build-file

[2] It needs to be installed separately

[3] http://www.tug.org/tex4ht/

Basic info about command configurations can be found in a work-in-progres *tex4ht tutorial*[4] , *tex4ht documentation*[5], and in series of blogposts on CV Radhakrishnan's blog: *Configure part 1*[6], *Configure part 2*[7], *Low level commands*[8]. Available options for `\Preamble` command are listed in the article *TeX4ht: options*[9].

Great source of tips for `tex4ht` configuring is *tex4ht tag on TeX.sx*[10], there is also a *tag for tex4ebook*[11].

Examples of interesting questions are *including images and fonts in ebooks*[12] or *setting image size in em units instead of pt*[13].

4.1 Provided configurations

`tex4ebook` provides some configurations for your usage:

`\Configure{UniqueIdentifier}{identifier}`

Every epub file should have unique identifier, like ISBN, DOI, URI etc. Default identifier is URI, with value `http://example.com/\jobname`.

`\Configure{OpfScheme}{URI}`

Type of unique identifier, default type is URI. It is used only in epub, it is deprecated for `epub3`

`\Configure{DocumentLanguage}{language code}`

Each epub must declare the document language. It is inferred from `babel` main language by default, but you can configure it when it doesn't work correctly. The `language code` should be in ISO 639-1 form.

`\Configure{CoverImage}{before cover image}{after cover image}`

By default, cover image is inserted in `<div class="cover-image">` element, you may use this configuration option to insert different markup, or even to place the cover image to standalone page.

`\Configure{CoverMimeType}{mime type of cover image}`

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[4] `https://github.com/michal-h21/helpers4ht/wiki/tex4ht-tutorial`
[5] `http://www.tug.org/applications/tex4ht/mn11.html`
[6] `http://www.cvr.cc/?p=323`
[7] `http://www.cvr.cc/?p=362`
[8] `http://www.cvr.cc/?p=482`
[9] `http://www.cvr.cc/?p=504`
[10] `http://tex.stackexchange.com/questions/tagged/tex4ht`
[11] `http://tex.stackexchange.com/questions/tagged/tex4ebook`
[12] `http://tex.stackexchange.com/a/213165/2891`
[13] `http://tex.stackexchange.com/a/195718/2891`

Default value is `image/png`, change this value if you use other image type than `png`.

If you don't want to include the cover image in the document, use command

```
\CoverMetadata{filename}
```

in the config file.

```
\Configure{OpfMetadata}{item element}
```

Add item to `<metadata>` section in the `OPF` file.

```
\Configure{OpfManifest}{maifest element}
```

Add item to `<manifest>` section in the `OPF` file.

```
\Configure{xmlns}{prefix}{uri}
```

Add xml name space to `xhtml` files. Useful in `EPUB 3`

4.2   Commands available in config files

`\OpfRegisterFile[filename]` register file in the `OPF` file. Current output file is added by default.

`\OpfAddProperty{property type}` add `EPUB3` property for the current file. See *EPUB3 spec*[14]

`\OpfGuide[filename]{title}{type}` Add file to the `<guide>` section in the `OPF` file. See *Where do you start an ePUB and what is the <guide> section of the .OPF file?*[15] for some details. Note that `<guide>` is deprecated in `EPUB 3`.

4.3   Build files

`tex4ebook` uses `make4ht`[16] as a build system. See `make4ht` documentation for details on build files.

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[14]http://www.idpf.org/epub/301/spec/epub-publications.html#
sec-item-property-values

[15]http://epubsecrets.com/where-do-you-start-an-epub-and-what-is-the-guide-section-of-the-opf-file.
php

[16]https://github.com/michal-h21/make4ht

5 Troubleshooting

When compilation of the document breaks with error during LaTeX run, it may be caused by some problem in tex4ht configuration. Comment out line \usepackage{tex4ebook} in your source file and run command:

```
htlatex filename
```

if same error as in tex4ebook run arises, the problem is in some tex4ht configuration. Try to identify the source of problem and if you cannot find the solution, make minimal example showing the error and ask for help either on *tex4ht mailing list*[17] or on *TeX-sx*[18].

5.1 Fontspec

tex4ht currently doesn't support fontspec and open type fonts. At this moment, workaround for this is to modify your source file and conditionally include fontspec and any other conflicting packages only when document is not processed with tex4ht.

Sample:

```
\documentclass{article}
\makeatletter
\@ifpackageloaded{tex4ht}{%
% Packages for tex4ht unicode support
\usepackage[utf8]{inputenc}
\usepackage[T1]{fontenc}
\usepackage[english,czech]{babel}
}{%
% Packages for xelatex
\usepackage{fontspec}
\usepackage{polyglossia}
\setmainfont{Latin Modern Roman}
}
\makeatother
```

The drawback is that not all characters of the Unicode range are supported with inputenc. For some solutions of this limitation, see a thread on *tex4ht mailing list*[19]

Other approach is to use alternative4ht package from helpers4ht bundle. It works only with Lua backend, but it supports full unicode and you don't have to use conditional package inclusion in your document. See an example.

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[17]http://tug.org/mailman/listinfo/tex4ht

[18]http://tex.stackexchange.com/

[19]http://tug.org/pipermail/tex4ht/2013q1/000719.html

5.2 Validation

In case of successful compilation, use command line tool `epubcheck`[20] to check whether your document doesn't contain any errors.

Type

```
epubcheck filename.epub
```

5.2.1 Common validation issues:

- WARNING: filename.epub: item (OEBPS/foo.boo) exists in the zip file, but is not declared in the OPF file

Delete the `filename-(epub|epub3|mobi)` folder and `filename.epub`. Then run `tex4ebook` again.

- WARNING(ACC-009): hsmmt10t.epub/OEBPS/hsmmt10tch17.xhtml(235,15): MathML should either have an alt text attribute or annotation-xml child element.

This is accessibility message. Unless you use some macro with annotations for each math instance, you will get lot of these messages. Try to use `epubcheck -e` to print only serious errors.

6 Changes

- 31/03/2016 Version 0.1d

    - bug fix: Unicode wasn't used by default
    - bug fix: Formats weren't preserved

- 06/12/2015 Version 0.1c

    - added `--help` and `--version` command line options

- 25/11/2015

    - added missing language codes
    - added `\Configure{DocumentLanguage}` for the cases when document language inferencing doesn't work

- 17/11/2015

    - use mkparams for cli arguments handling.
    - fixed inconsistencies between recent changes in make4ht and tex4ebook

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[20]you need to install it separately, see `https://github.com/IDPF/epubcheck`

- 24/09/2015 Version 0.1b

  – info about new workaround for `fontspec` package

- 25/08/2015

  – fatal error happened with epub3 when the document didn't contain the TOC

- 23/08/2015

  – simple cleaning of the ncx file if tidy command isn't available

- 05/07/2015 Version 0.1a

  – `tex4ebook` script was missing in the distribution zip file
  – all links moved to footnotes in the documentation

- 29/06/2015 Version 0.1

  – fixes in documentation

- 22/06/2015

  – changes moved from README.md to CHANGELOG.md

- 18/06/2015

  – replaced `--mathml` option with `--mode`. For `mathml` support, use`mathml` option for `tex4ht.sty`.
  – lot of stuff was fixed in `epub3` support.
  – new command `\OpfAddProperty`

- 14/01/2015

  – thanks Volker Gottwald for guide on installing and using tex4ebook on Windows

- 23/11/2014

  – added new command `\OpfGuide`, for adding items to `<guide>` section in the `opf` file. This is useful for `epub` and `mobi` formats. Usage:

    `\OpfGuide[filename]{title}{reference type}`

    `filename` is optional, current file name is used when empty. See epub secrets article

- 20/10/2014

- – fixed issues with starred sections
- – files created with starred sectioning commands (`\chapter*`, `\section*`) should be included in correct reading order now

- 16/09/2014

  - – new features added
  - – new configuration file for `--tidy` option, mathml and html5 elements are supported. This means that many validation errors in `mathml` output can be fixed with `--tidy` option
  - – added configuration for all languages supported by `babel`
  - – `woff` and `ttf` fonts are supported
  - – added inline footlines in `epub3` format
  - – added `no-cut` command line option for breaking sections and chapters into standalone pages
  - – Please support iniciative for improving mathml support in Gecko and Webkit engines. This will hopefully improve also Epub3 readers.

- 10/08/2013

  - – `make4ht` is now standalone application which `tex4ebook` depends on. You must install it in order to use current `tex4ebook` version.