

# The tex4ebook package

Michal Hoftich\*

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## 1 Introduction

TeX4ebook is a tool for conversion from L<sup>A</sup>T<sub>E</sub>X to ebook formats, such as EPUB, MOBI and EPUB 3. It is based on TeX4ht<sup>1</sup>, which provides instructions for

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\*michal.h21@gmail.com

<sup>1</sup><https://tug.org/tex4ht/>

the actual  $\text{\LaTeX}$  to HTML conversion, and on `make4ht`<sup>2</sup>.

The conversion is focused on the logical structure of the converted document 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 a configuration file.

`TeX4ebook` supports the same features as `make4ht`, in particular build files and extensions. These may be used for post-processing of the generated HTML files, or to configure the image conversion. See the `make4ht` documentation to see the supported features.

## 1.1 License

Permission is granted to copy, distribute and/or modify this software under the terms of the  $\text{\LaTeX}$  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 a package which causes a compilation error.

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  $\text{\TeX}$  files

## 2.1 Available commands

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

# 3 Command line options

`-a,--loglevel` Set message log level. Possible values: debug, info, status, warning, error, fatal. Default: status.

`-c,--config` specify custom config file for `TeX4ht`

**example config file:** File `sample.cfg`

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<sup>2</sup><https://ctan.org/pkg/make4ht?lang=en>

```

\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<sup>3</sup>. Default build file filename is filename.mk4, use this option if you use different filename.
- f,--format (default epub)** Output format. Possible values are epub, epub3 and mobi.
- j,--jobname** Specify the output file name, without file extension.
- l,--lua** Use LuaLaTeX as TeX engine.
- 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 the htlatex run. This is necessary for the execution of the external commands from your source files.
- t,--tidy** process output html files with HTML tidy command<sup>4</sup>.
- x,--xetex** Use xelatex for document compilation
- v,--version** Print the version number.

## 4 Configuration

TeX4ebook uses TeX4ht<sup>5</sup> for conversion from LaTeX to html. TeX4ht is highly configurable using config files. Basic config file structure is

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<sup>3</sup><https://github.com/michal-h21/make4ht#build-file>

<sup>4</sup>It needs to be installed separately

<sup>5</sup><http://www.tug.org/tex4ht/>

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

Basic info about command configurations can be found in a work-in-progress *TeX4ht tutorial*<sup>6</sup>, *TeX4ht documentation*<sup>7</sup>, and in series of blogposts on CV Radhakrishnan's blog: *Configure part 1*<sup>8</sup>, *Configure part 2*<sup>9</sup>, *Low level commands*<sup>10</sup>. Available options for \Preamble command are listed in the article *TeX4ht: options*<sup>11</sup>. *Comparison of tex4ebook and Pandoc output*<sup>12</sup>

A great source of tips for TeX4ht configuration is *tex4ht tag on TeX.sx*<sup>13</sup>. There is also a *tag for tex4ebook*<sup>14</sup>.

Examples of interesting questions are *including images and fonts in ebooks*<sup>15</sup> or *setting image size in em units instead of pt*<sup>16</sup>.

## 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{@author}{\let\footnote\@gobble}
```

Local definitions of commands used in the \author command. As contents of \author are used in XML files, it is necessary to strip away any information which don't belongs here, such as \footnote.

```
\Configure{OpfScheme}{URI}
```

Type of unique identifier, default type is URI. It is used only in the EPUB format, it is deprecated for EPUB 3.

```
\Configure{resettoclevels}{list of section types in descending order}
```

---

<sup>6</sup><https://github.com/michal-h21/helpers4ht/wiki/tex4ht-tutorial>

<sup>7</sup><http://www.tug.org/applications/tex4ht/mn11.html>

<sup>8</sup><https://web.archive.org/web/20180908234227/http://www.cvr.cc/?p=323>

<sup>9</sup><https://web.archive.org/web/20180908201057/http://www.cvr.cc/?p=362>

<sup>10</sup><https://web.archive.org/web/20180909101325/http://cvr.cc/?p=482>

<sup>11</sup><https://web.archive.org/web/20180813043722/http://cvr.cc/?p=504>

<sup>12</sup>[https://github.com/richelbilderbeek/travis\\_tex\\_to\\_epub\\_example\\_1](https://github.com/richelbilderbeek/travis_tex_to_epub_example_1)

<sup>13</sup><http://tex.stackexchange.com/questions/tagged/tex4ht>

<sup>14</sup><http://tex.stackexchange.com/questions/tagged/tex4ebook>

<sup>15</sup><http://tex.stackexchange.com/a/213165/2891>

<sup>16</sup><http://tex.stackexchange.com/a/195718/2891>

Configure section types which should be included in the NCX file. Default value is the whole document hierarchy, from \part to \paragraph.

```
\Configure{DocumentLanguage}{language code}
```

Each EPUB file 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}
```

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}{manifest element}
```

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

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

Add XML name space to the generated XHTML files. Useful in EPUB 3.

## 4.2 Commands available in the config file

\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*<sup>17</sup>

\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?*<sup>18</sup> for some details. Note that <guide> is deprecated in EPUB 3.

<sup>17</sup><http://www.idpf.org/epub/301/spec/epub-publications.html#sec-item-property-values>

<sup>18</sup><http://epubsecrets.com/where-do-you-start-an-epub-and-what-is-the-guide-section-of-the-opf-file.php>

## 4.3 Build files

`tex4ebook` uses `make4ht`<sup>19</sup> as a build system. See `make4ht` documentation for details on build files.

## 4.4 .tex4ebook configuration file

It is possible to globally modify the build settings using the configuration file. New compilation commands can be added, extensions can be loaded or disabled and settings can be set.

### 4.4.1 Location

The configuration file can be saved either in `$HOME/.config/tex4ebook/config.lua` or in `.tex4ebook` in the current directory or it's parents (up to `$HOME`).

See the `make4ht` documentation for an example and more information.

## 5 Troubleshooting

### 5.1 Fixed layout EPUB

The basic support for the Fixed layout EPUB 3 can be enabled using the following configurations:

```
\Configure{OpfMetadata}{\HCode{<meta property="rendition:layout">pre-paginated</meta>}}
\Configure{OpfMetadata}{\HCode{<meta property="rendition:orientation">landscape</meta>}}
\Configure{OpfMetadata}{\HCode{<meta property="rendition:spread">none</meta>}}
\Configure{@HEAD}{\HCode{<meta name="viewport" content="width=1920, height=1080"/>\hnewline}}
```

Modify the dimensions in the `<meta name="viewport">` element according to your needs.

### 5.2 Math issues

Note that while `mobi` is supported by Amazon Kindle, most widespread ebook reader, it doesn't support MathML. This means that math must be represented as images. The same issue is true for the EPUB format as well. This is problematic especially for the inline math, as you may experience wrong vertical alignment of the math content and surrounding text. If your ebook contains math, a better solution is to produce the `epub3` format, as it supports MathML. The issue with EPUB 3 is that majority of e-ink ebook readers don't support it. Reader applications exists mainly for Android and Apple devices. For books which contains mainly prose, all formats should be suitable, but EPUB 3 supports most features from web standards, such as CSS.

<sup>19</sup><https://github.com/michal-h21/make4ht>

## 5.3 Compilation errors

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*<sup>20</sup> or on *TeX.sx*<sup>21</sup>.

## 5.4 Validation

In case of successful compilation, use command line tool `epubcheck`<sup>22</sup> to check whether your document doesn't contain any errors.

Type

```
epubcheck filename.epub
```

### 5.4.1 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): `hsmm10t.epub/OEBPS/hsmm10tch17.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

- 2019/11/01
  - released version 0.3a
  - added `tex4ebook-` prefix to the output formats.
  - removed unused files.

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<sup>20</sup><http://tug.org/mailman/listinfo/tex4ht>

<sup>21</sup><http://tex.stackexchange.com/>

<sup>22</sup>you need to install it separately, see <https://github.com/IDPF/epubcheck>

- 2019/11/01
  - released version 0.3
- 2019/10/20
  - fixed the TOC cleanup in the ePub 3 mode.
  - added support for the page-spread-left and page-spread-right properties.
- 2019/10/20
  - adapted to use the make4ht logging mechanism.
- 2019/10/06
  - fixed bug with void elements parsing in the OPF file.
  - undo \XeTeXcharclass for the : character when the OPF file is generated.
- 2019/09/16
  - make the default build sequence before loading of the extensions.  
Some extensions need to modify the build sequence.
- 2019/08/28
  - added support for reading input from STDIN.
- 2019/08/27
  - added support for the --jobname command line option.
- 2019/08/25
  - use the mkparams.get\_args function to retrieve the command line options
- 2019/07/24
  - added support for the \author command with an optional argument
- 2019/05/09
  - added support for the \title command with an optional argument
- 2019/04/04

- register appendix chapters and section in the OPF file list
  - fixed handling of appendices in the NCX table of contents
- 2019/03/21
  - released version 0.2c
- 2019/03/07
  - use Luatexbase package in the documentation because of Microtype error
  - remove <guide> element even in ePub 2
  - added encoding attribute to XML declaration in the NCX and OPF files
  - clean the temporary directory (filename-format) before file packing
- 2019/01/21
  - added \Configure{@author}
- 2019/01/10
  - released version 0.2b
- 28/11/2018
  - added support for appendix sections to the NCX file
- 27/11/2018
  - use the uni-html4 option by default. It will convert some math characters as Unicode chars
- 13/11/2018
  - added –xetex option to the README
- 30/10/2018
  - use the original section numbering in TOC in the Epub 3 output.  
The numbering of the <o1> list is disabled by CSS.
- 18/10/2018
  - fixed the executable installation
- 03/09/2018

- updated the --help message
- 30/08/2018
  - removed spurious \NoFonts command in the footnote configuration, it caused formating issues in the document following a footnote
- 22/06/2018
  - added support for the output directory selection
- 09/05/2018
  - added support for Polyglossia language codes
  - released version 0.2a
- 03/05/2018
  - fixed output format handling
- 16/04/2018
  - don't run Git if the Makefile is executed outside of Git repo
- 09/04/2018
  - released version 0.2
- 06/04/2018
  - documented the configuration file
- 02/03/2018
  - added support for .tex4ebook configuration file
- 28/02/2018
  - added media overlays handling
- 19/10/2017
  - added support for XeTeX
- 06/10/2017
  - added support for Make4ht extensions
- 27/04/2017 Version 0.1e

- pack the accumulated changes for distribution
  - set version number from git tag
- 17/01/2017
  - process duplicate images only once
  - check the OPF table for duplicated id attributes
- 11/01/2017
  - pass settings table to the build file.
- 19/12/2016
  - new configuration: \Configure{resettoclevels}{list of sectioning levels to be included in the NCX}
- 31/10/2016
  - added tidyconf.conf to the Makefile
- 22/10/2016
  - added support for new Make4ht command Make :add\_file
- 22/08/2016
  - fixed incorrect <dc:creator> generated by \author
  - clean ids in the OPF file if they contain invalid characters at the beginning
- 31/07/2016
  - use monospace font for command line options in order to prevent double hyphens to become dashes by ligaturing
- 22/07/2016
  - removed debugging message when --lua option is used
- 07/04/2016
  - Cut \part commands to standalone pages
- 05/04/2016
  - bug fix: pages which contained math were arranged before other pages

- 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
- 24/09/2015 Version 0.1b
  - info about new workaround for fonts spec 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`] (<https://d800fotos.wordpress.com/2015/01/19/create-e-books-from-latex-tex-files-ebook-aus-latex-tex-dateien-erstellen/>) 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] (<http://epubsecrets.com/where-do-you-start-an-epub-and-what-is-the-guide-section-of-the-opf-file.php>) 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 footnotes in `epub3` format
  - added `no-cut` command line option for breaking sections and chapters into standalone pages

- Please support [iniciative for improving mathml support](<http://www.ulule.com/mathematics-ebooks/>) in Gecko and Webkit engines. This will hopefully improve also Epub3 readers.

- 10/08/2013

- [`make4ht`](<https://github.com/michal-h21/make4ht>) is now standalone application which `tex4ebook` depends on. You must [install it](<https://github.com/michal-h21/make4ht#instalation>) in order to use current tex4ebook version.