xappendix --- An extensible appendix package*

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Abstract

For a long time the appendix package was the de facto standard to configure appendices, including insertion of a part heading before the first appendix, and inclusion in the table of contents.
However, though interaction with the hyperref package is supported, to add multiple sets of appendices one needs to take special care to prevent duplicate page anchors.
This package aims to overcome these issues by adding built in support for multiple appendix sets. Furthermore, configuration has been rewritten to use pgfkeys as a frontend to redefining internal strings, as well as the use of LaTeX3.

Contents

1 Introduction **2**

2 Usage **2**
2.1 Package options 2
2.2 Configuration 2
2.3 Execution 2

3 Backward compatibility **2**

4 Implementation **3**

Change History **8**

Index **8**

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1 Introduction

Describe what `\appendix` does by default, how appendix changes this, and why this rewrite was started. `\memoir` detection, automatically disables emulation of original appendix

2 Usage

xappendix separates the typesetting of appendices into three stages: package loading, configuration, and execution.

2.1 Package options

Since xappendix aims to provide full backward compatibility with appendix (at least for the time being) some package options are available.

First of all, to enable the backward compatibility the package option `compat` must be specified. This provides the necessary commands and sets these as the values in the ⟨*default*⟩ appendix configuration. **Note:** backward compatibility relies on the ⟨*default*⟩ configuration, altering this with `\appendixset` might break it. See section 3 for more information on backward compatibility.

2.2 Configuration

`\appendixset` The main configuration of the package is through the `\appendixset[`⟨*name*⟩`]{`⟨*conf*⟩`}` command.

2.3 Execution

`\appendix` Starting the appendices still works through the default `\appendix` command. However, this has been modified to take an optional argument `[`⟨*name*⟩`]`, which corresponds to the optional argument given to `\appendixset`. If no argument is given it defaults to ⟨*default*⟩, for ease of use as well as backward compatibility.

`appendices` `subappendices` Similar to the original appendix package these environments are provided to group a set of appendices, either as a new chapter/section (in case of `appendices`), or as a section/subsection under the current chapter/section (in case of `subappendices`).

3 Backward compatibility

Backward compatibility is implemented by setting the configuration of the ⟨*default*⟩ appendices. Since this implementation of the backward compatibility is inherently fragile it is recommended to use the new syntax wherever possible. Therefore tables 1 and 2 merely provide an overview of what new command the old commands are mapped to. Documentation of those commands can be found in the original appendix manual.

Usage of these options or commands without setting the package option `[`⟨*compat*⟩`]` results in warning, and the command will be ignored.

Table 1: Mapping of old commands to new key

Command	Key
\appendixpage	/xappendix/⟨*name*⟩/add page
\addappheadtotoc	/xappendix/⟨*name*⟩/add to toc
\noappendicestocpagenum	/xappendix/⟨*name*⟩/page num to toc=false
\appendicestocpagenum	/xappendix/⟨*name*⟩/page num to toc=true

Table 2: Mapping of old package options to new key

Option	Key
toc	/xappendix/⟨*name*⟩/add to toc
title	/xappendix/⟨*name*⟩/add title
titletoc	/xappendix/⟨*name*⟩/add title in toc
header	/xappendix/⟨*name*⟩/add title in header
page	/xappendix/⟨*name*⟩/add page

4 Implementation

```
⟨*package⟩
```

Declare module name for internal macros

```
⟨@@=xappendix⟩
```

First of all announce the package signature, and enable expl

```
\ProvidesExplPackage {xappendix} {2014/04/01} {0.0}
  {An extensible appendix package}
```

Declare a number of switches for later reference.

```
\bool_new:N \g__xappendix_chapter_mode_bool
\bool_new:N \g__xappendix_hyperref_bool
\bool_new:N \g__xappendix_backward_compat_bool
\bool_new:N \g__xappendix_add_to_toc_bool
\bool_new:N \g__xappendix_add_title_bool
\bool_new:N \g__xappendix_add_title_to_toc_bool
\bool_new:N \g__xappendix_add_title_to_header_bool
\bool_new:N \g__xappendix_add_page_bool

\int_new:N \g__xappendix_appendix_number_int
```

Check if the chapter command is defined, and if not whether the section command is defined. If neither are available throw a warning and end input.

```
\cs_new_nopar:Nn \__xappendix_endinput: {
    \prg_do_nothing:
  }
\cs_if_exist:NTF \chapter {
    \bool_gset_true:N \g__xappendix_chapter_mode_bool
  } {
```

```
    \cs_if_exist:NF \section {
        \msg_new:nnn {xappendix} {class-incompatible} {
           Current~class~incompatible~with~xappendix:~no~sectioning~commands~available.
            \msg_see_documentation_text:n {xappendix}
          }
        \msg_warning:nn {xappendix} {class-incompatible}
        \cs_gset:Nn \__xappendix_endinput: {\endinput}
      }
  }
\__xappendix_endinput:
\ProvideDocumentCommand\phantomsection{}{}
\cs_new:Nn \__xappendix_the_appendix_number: {
    \int_to_alph:n {\g__xappendix_appendix_number_int}
  }
\AtBeginDocument {%
    \@ifpackageloaded{hyperref}{%
        \bool_gset_true:N \g__xappendix_hyperref_bool%
      }{}%
  }
```

If package option compat is not set the other options make no sense, setup a warning to be issued if it is set without compat.

```
\msg_new:nnnn { xappendix } { deprecated-options }
  { Old~style~package~option~#1~deprecated,~ignored~without~option~compat }
   { Enable~option~compat~to~activate~old~options,~option~ignored.
     \msg_see_documentation_text:n { xappendix } }
```

Declare option compat first so the rest can check for it.

```
\DeclareOption{compat}{ \bool_gset_true:N \g__xappendix_backward_compat_bool}
\DeclareOption{toc}{
  \bool_if:nTF { \g__xappendix_backward_compat_bool }
    { \bool_gset_true:N \g__xappendix_add_to_toc_bool }
   { \msg_warning:nnx { xappendix } { deprecated-options } { toc } }
  }
\DeclareOption{title}{
  \bool_if:nTF { \g__xappendix_backward_compat_bool }
    { \bool_gset_true:N \g__xappendix_add_title_bool }
    { \msg_warning:nnx { xappendix } { deprecated-options } { title } }
  }
\DeclareOption{titletoc}{
  \bool_if:nTF { \g__xappendix_backward_compat_bool }
    { \bool_gset_true:N \g__xappendix_add_title_to_toc_bool }
    { \msg_warning:nnx { xappendix } { deprecated-options } { titletoc } }
  }
\DeclareOption{header}{
  \bool_if:nTF { \g__xappendix_backward_compat_bool }
    { \bool_gset_true:N \g__xappendix_add_title_to_header_bool }
```

```
    { \msg_warning:nnx { xappendix } { deprecated-options } { header } }
  }
\DeclareOption{page}{
  \bool_if:nTF { \g__xappendix_backward_compat_bool }
    { \bool_gset_true:N \g__xappendix_add_page_bool }
   { \msg_warning:nnx { xappendix } { deprecated-options } { page } }
  }
\ProcessOptions\relax
```

\appendixtocon
\appendixtocoff
\appendixtitleon
\appendixtitleoff
\appendixtitletocon
\appendixtitletocoff
\appendixheaderon
\appendixheaderoff
\appendixpageon
\appendixpageoff

Since depending on old style commands without the option compat, we declare all commands only with the option set, and issue a warning if it's not.

```
\msg_new:nnnn { xappendix } { deprecated-commands }
  { Old~style~command~#1~deprecated,~ignored~without~option~compat }
  { Enable~package~option~compat~to~activate~old~commands,~command~ignored.
    \msg_see_documentation_test:n { xappendix } }
\bool_if:nTF { \g__xappendix_backward_compat_bool }
```

Compatibility mode enabled, define old style commands

```
  {
    \NewDocumentCommand\appendixtocon {}
      { \bool_gset_true:N \g__xappendix_add_to_toc_bool }
    \NewDocumentCommand\appendixtocoff {}
      { \bool_gset_false:N \g__xappendix_add_to_toc_bool }
    \NewDocumentCommand\appendixtitleon {}
      { \bool_gset_true:N \g__xappendix_add_title_bool }
    \NewDocumentCommand\appendixtitleoff {}
      { \bool_gset_false:N \g__xappendix_add_title_bool }
    \NewDocumentCommand\appendixtitletocon {}
      { \bool_gset_true:N \g__xappendix_add_title_to_toc_bool }
    \NewDocumentCommand\appendixtitletocoff {}
      { \bool_gset_false:N \g__xappendix_add_title_to_toc_bool }
    \NewDocumentCommand\appendixheaderon {}
     { \bool_gset_true:N \g__xappendix_add_title_to_header_bool }
    \NewDocumentCommand\appendixheaderoff {}
     { \bool_gset_false:N \g__xappendix_add_title_to_header_bool }
    \NewDocumentCommand\appendixpageon {}
      { \bool_gset_true:N \g__xappendix_add_page_bool }
    \NewDocumentCommand\appendixpageoff {}
      { \bool_gset_false:N \g__xappendix_add_page_bool }
  }
```

Compatibility mode disabled, issue warning only

```
  {
    \NewDocumentCommand\appendixtocon {}
      { \msg_warning:nnx { xappendix } { deprecated-commands }
          { \appendixtocon } }
    \NewDocumentCommand\appendixtocoff {}
      { \msg_warning:nnx { xappendix } { deprecated-commands }
          { \appendixtocoff } }
    \NewDocumentCommand\appendixtitleon {}
      { \msg_warning:nnx { xappendix } { deprecated-commands }
```

```
          { \appendixtitleon } }
    \NewDocumentCommand\appendixtitleoff {}
      { \msg_warning:nnx { xappendix } { deprecated-commands }
          { \appendixtitleoff } }
    \NewDocumentCommand\appendixtitletocon {}
      { \msg_warning:nnx { xappendix } { deprecated-commands }
          { \appendixtitletocon } }
    \NewDocumentCommand\appendixtitletocoff {}
      { \msg_warning:nnx { xappendix } { deprecated-commands }
          { \appendixtitletocoff } }
    \NewDocumentCommand\appendixheaderon {}
      { \msg_warning:nnx { xappendix } { deprecated-commands }
          { \appendixheaderon } }
    \NewDocumentCommand\appendixheaderoff {}
      { \msg_warning:nnx { xappendix } { deprecated-commands }
          { \appendixheaderoff } }
    \NewDocumentCommand\appendixpageon {}
      { \msg_warning:nnx { xappendix } { deprecated-commands }
          { \appendixpageon } }
    \NewDocumentCommand\appendixpageoff {}
      { \msg_warning:nnx { xappendix } { deprecated-commands }
          { \appendixpageoff } }
  }
```

(*End definition for* `\appendixtocoff`. *These functions are documented on page* ??.)
(*End definition for* `\appendixtocon`. *This function is documented on page* ??.)

Declare internal macros to save and restore section and chapter numbers

```
\int_new:N \g__xappendix_save_section_int
\int_new:N \g__xappendix_save_appendix_int
\cs_new:Npn \g__xappendix_save_section_number:n {
    \bool_if:nTF { \g__xappendix_chapter_mode_bool }
    { \int_set:Nn { \g__xappendix_save_section_int } { \value{chapter} } }
     { \int_set:Nn { \g__xappendix_save_section_int } { \value{section} } }
  }
\cs_new:Npn \g__xappendix_restore_section_number:n {
    \bool_if:nTF { \g__xappendix_chapter_mode_bool }
      { \int_set:Nn { \setcounter{chapter} } { \int_use:N \g__xappendix_save_section_int } }
      { \int_set:Nn { \setcounter{section} } { \int_use:N \g__xappendix_save_section_int } }
  }
\cs_new:Npn \g__xappendix_save_appendix_number:n {
    \bool_if:nTF { \g__xappendix_chapter_mode_bool }
    { \int_set:Nn { \g__xappendix_save_appendix_int } { \value{chapter} } }
    { \int_set:Nn { \g__xappendix_save_appendix_int } { \value{section} } }
  }
```

```
\cs_new:Npn \g__xappendix_restore_appendix_number:n {
    \bool_if:nTF { \g__xappendix_chapter_mode_bool }
      { \int_set:Nn { \setcounter{chapter} } { \int_use:N \g__xappendix_save_appendix_int } }
      { \int_set:Nn { \setcounter{section} } { \int_use:N \g__xappendix_save_appendix_int } }
  }
\bool_if:nTF { \g__xappendix_backward_compat_bool }
  {
    \ProvideDocumentCommand \appendixname {} {Appendix}
    \NewDocumentCommand \appendixtocname {} {Appendices}
    \NewDocumentCommand \appendixpagename {} {Appendices}
  } {
    \ProvideDocumentCommand \appendixname {} {Appendix}
    \NewDocumentCommand \appendixtocname {}
      { \msg_warning { xappendix } { deprecated-commands } { \appendixtocname } }
    \NewDocumentCommand \appendixpagename {}
      { \msg_warning { xappendix } { deprecated-commands } { \appendixtocname } }
  }

\NewDocumentCommand\testhyperref{}{
    \bool_if:nTF {\g__xappendix_hyperref_bool}
      {Hyperref detected}
      {Hyperref not detected}
  }
```

\appendixset

```
\NewDocumentCommand\appendixset{O{default}}{
    \pgfqkeys{/xappendix/#1}
  }
```

\appendix

```
\cs_new:Nn \__xappendix_old_appendix: {\prg_do_nothing:}
\cs_set_eq:NN \__xappendix_old_appendix: \appendix
\cs_new:Nn \__xappendix_apply_settings:n {#1}
\RenewDocumentCommand \appendix {O{default}} {
    \__xappendix_apply_settings:n {#1}
    \__xappendix_old_appendix:
  }
```

⟨/package⟩

Change History

v0.0

General: First development release 1

Index

The italic numbers denote the pages where the corresponding entry is described, numbers underlined point to the definition, all others indicate the places where it is used.

Symbols

\@ifpackageloaded 36
__xappendix_apply_settings:n 140, 142
__xappendix_endinput: 15, 27, 30
__xappendix_old_appendix: 138, 139, 143
__xappendix_the_appendix_number: 32

A

appendices (environment) *2*
\appendix *2*, 138, 139, 141
\appendixheaderoff 71, 91, 120, 122
\appendixheaderon 71, 89, 117, 119
\appendixpageoff 71, 95, 126, 128
\appendixpageon 71, 93, 123, 125
\appendixset *2*, 135, 135
\appendixtitleoff 71, 83, 108, 110
\appendixtitleon 71, 81, 105, 107
\appendixtitletocoff . . 71, 87, 114, 116
\appendixtitletocon . . . 71, 85, 111, 113
\appendixtocoff 71, 79, 102, 104
\appendixtocon 71, 77, 99, 101
\AtBeginDocument 35

B

\bool_gset_false:N . . . 80, 84, 88, 92, 96
\bool_gset_true:N 19, 37, 44, 47, 52, 57, 62, 67, 78, 82, 86, 90, 94
\bool_if:nTF . . . 46, 51, 56, 61, 66, 75, 131
\bool_new:N 5, 6, 7, 8, 9, 10, 11, 12

C

\chapter 18
\cs_gset:Nn 27
\cs_if_exist:NF 21
\cs_if_exist:NTF 18
\cs_new:Nn 32, 138, 140
\cs_new_nopar:Nn 15
\cs_set_eq:NN 139

D

\DeclareOption 44, 45, 50, 55, 60, 65

E

\endinput 27
appendices *2*
subappendices *2*

G

\g__xappendix_add_page_bool 12, 67, 94, 96
\g__xappendix_add_title_bool 9, 52, 82, 84
\g__xappendix_add_title_to_header_bool 11, 62, 90, 92
\g__xappendix_add_title_to_toc_bool 10, 57, 86, 88
\g__xappendix_add_to_toc_bool 8, 47, 78, 80
\g__xappendix_appendix_number_int 14, 33
\g__xappendix_backward_compat_bool 7, 44, 46, 51, 56, 61, 66, 75
\g__xappendix_chapter_mode_bool 5, 19
\g__xappendix_hyperref_bool 6, 37, 131

I

\int_new:N 14
\int_to_alph:n 33

M

\msg_new:nnn 22
\msg_new:nnnn 40, 71
\msg_see_documentation_test:n 74
\msg_see_documentation_text:n 24, 43
\msg_warning:nn 26
\msg_warning:nnx 48, 53, 58, 63, 68, 100, 103, 106, 109, 112, 115, 118, 121, 124, 127

N

\NewDocumentCommand 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 99, 102, 105, 108, 111, 114, 117, 120, 123, 126, 130, 135

P

\pgfqkeys 136
\phantomsection 31
\prg_do_nothing: 16, 138
\ProcessOptions 70
\ProvideDocumentCommand 31
\ProvidesExplPackage 3

R

\relax 70
\RenewDocumentCommand 141

S

\section 21
subappendices (environment) *2*

T

\testhyperref 130