R packages: Vignettes prior to R 3.0.0

Henrik Bengtsson

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Introduction

When building an R package, Sweave/LaTeX vignettes are recognized by R, compiled into PDFs, which are listed along with their source in the R help system, e.g. `help.start()`. These package vignettes are also being listed online on the CRAN and Bioconductor package pages. As of R v3.0.0, it is straighforward to also include vignettes of other type, include RSP-embedded vignettes.

For legacy versions of R prior to R v3.0.0 (released April 2013), some efforts have to be made to build and incorporate non-Sweave vignettes. This document describes how to include RSP and other non-Sweave vignettes in R packages in a way that is fully compatible with legacy and more recent versions of R. By following these instructions, the exact same package setup can be used regardless of R version and they work for any type of R vignettes, e.g. RSP, knitr and noweb.

How to

We assume that you are already familiar with how to use non-Sweave vignettes in R for R v3.0.0 and later. If not, please see other *R.rsp* vignettes on this topic as well as 'Writing R Extensions' part of the built-in R documention. This document explains the *additional steps* needed in order to for non-Sweave vignettes work also in version prior to R v3.0.0. More precisely, the following three files need to be available "as is" in the *vignettes/* directory of the package:

1. *dummy.Rnw*: A "dummy" Sweave vignette file triggering R's vignette installation procedures, and

2. *Makefile*: A file with instructions emulating the post-3.0.0 R vignette mechanisms, and

3. *.install_extras*: A file specifying which (source and generated output) vignette files to *install*[1].

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[1]The term *install* is used for vignettes to make it explicit that the orignal source files are located in

These files can be copied from the *R.rsp* package (see Appendix for their content) to the new package's *vignettes/* directory using:

```
filenames <- c("dummy.Rnw", "Makefile", ".install_extras")
pathS <- system.file("doc/templates", package="R.rsp")
pathD <- "vignettes"
dir.create(pathD)
pathnamesS <- file.path(pathS, gsub("^[.]", ",", filenames))
pathnamesD <- file.path(pathD, filenames)
file.copy(pathnamesS, to=pathnamesD)
```

Neither of these files need to be edited[2]. Note that the Makefile and the functions it utilizes are independent of the RSP markup language why it can also be used for other vignette formats as well. The use of custom *vignettes/Makefile* and *vignettes/.install_extras* files is described in Section 'Writing package vignettes' of 'Writing R Extensions'.

Improved HTML overview of vignettes

By default, the R HTML help system will list links to the PDF and the Sweave source of the vignettes. This means that also the dummy Rnw stub needed will also be listed. As explained in 'Writing R Extensions', it is possible to override this by providing a custom *vignettes/index.html* file. It can be tedious the manually edit the *index.html* file. For this reason, if the *index.html* file is missing, then the above *Makefile* automatically builds one (using RSP-embedded HTML) and populates it with the PDF and source files available according to what the vignette files specify (see also the Appendix).

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vignettes/, but when compiled are copied together with the output files to *inst/doc/* of the built package. Directory *vignettes/* is *not* installed to, and therefore not available in, the built package.

[2]The reason for the `gsub()` renaming is because R does not allow the last file to installed starting with a period. Instead with use a comma as a workaround.

Appendix

The generic Makefile file

The customized and generic *Makefile* that builds non-Sweave vignettes and any missing *index.html* file is available in *R.rsp* package directory *doc/templates/*. This *Makefile* should be copied "as is" to *vignettes/* of your package. Its content is:

```
# MACRO DEFINITIONS
RM=rm -f
R=$(R_HOME)/bin/Rscript

# TARGET DEFINITIONS
all: vignettes index.html

# Build all vignettes that has a %\VignetteBuild{} markup
vignettes:
    "$(R)" -e "if (getRversion() < 3) R.rsp::buildNonSweaveVignettes()"

# Create an HTML vignette index page
index.html:
    "$(R)" -e "if (getRversion() < 3) R.rsp::buildPkgIndexHtml()"

# Certain LaTeX files (e.g. bib, bst, sty) must be part of the build
# such that they are available for R CMD check.  These are excluded
# from the install using .Rinstignore in the top-level directory.
clean:
    $(RM) enginesMap.R
    $(RM) index.html.rsp
    $(RM) dummy.Rnw dummy.tex dummy.R dummy.html dummy.pdf
    $(RM) *.rsp.R
    $(RM) *.aux *.bbl *.blg *.log *.out *.sty *.toc
    $(RM) -r figures/
    $(RM) Makefile
```

The generic .install_extras file

The *vignettes/.install_extras* file controls which source and output vignette files should be installed and therefore be copied to the *inst/doc/* directory of the built package. The generic *.install_extras* file, available in *R.rsp* package directory *doc/templates/*, contains:

```
vignettes/[^/]+[.](Rnw)$
vignettes/[^/]+[.](rsp)$
vignettes/[^/]+[.](Rasciidoc|Rhtml|Rmd|Rrst|Rtex)$
vignettes/[^/]+[.](brew)$
vignettes/[^/]+[.](asciidoc|md|str|tex|ltx)$
vignettes/[^/]+[.](r|R)$
vignettes/[^/]+[.](pdf|PDF|html|HTML)$
vignettes/dummy[.](Rnw|pdf)$
```

The "trigger" dummy.Rnw file

The "dummy" Sweave source file *dummy.Rnw* file available by in *R.rsp* package directory *doc/templates/*, which triggers R's vignette installation mechanism to process the *vignettes/Makefile*, contains:

```
% - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
% To build non-Sweave vignettes, place this dummy.Rnw in vignettes/
```

```
% together with the custom Makefile (also from R.rsp).  That will
% trigger R to build all non-Sweave vignettes.  The two files
% dummy.Rnw and the Makefile will not be the package installation.
% - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
%\VignetteIndexEntry{Dummy vignette to trigger the use of the Makefile}
%\VignetteEngine{R.rsp::dummy_Rnw}
\documentclass{article}
\begin{document}
\end{document}
```

Session information

- R version 3.3.0 Patched (2016-05-12 r70604), `x86_64-w64-mingw32`

- Locale: `LC_COLLATE=C`, `LC_CTYPE=English_United States.1252`, `LC_MONETARY=English_United States.1252`, `LC_NUMERIC=C`, `LC_TIME=English_United States.1252`

- Base packages: base, datasets, grDevices, graphics, methods, stats, utils

- Other packages: R.devices 2.14.0, R.methodsS3 1.7.1, R.oo 1.20.0, R.rsp 0.30.0

- Loaded via a namespace (and not attached): Cairo 1.5-9, R.cache 0.12.0-9000, R.utils 2.3.0, base64enc 0.1-4, digest 0.6.9, markdown 0.7.7, tools 3.3.0

This report was automatically generated using `rfile()` of the R.rsp package. Total processing time after RSP-to-R translation was 0.03 secs.