

# Investigating and fixing a new CRAN check error in my OneSampleMR package

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20/05/2022



MRC Integrative  
Epidemiology  
Unit



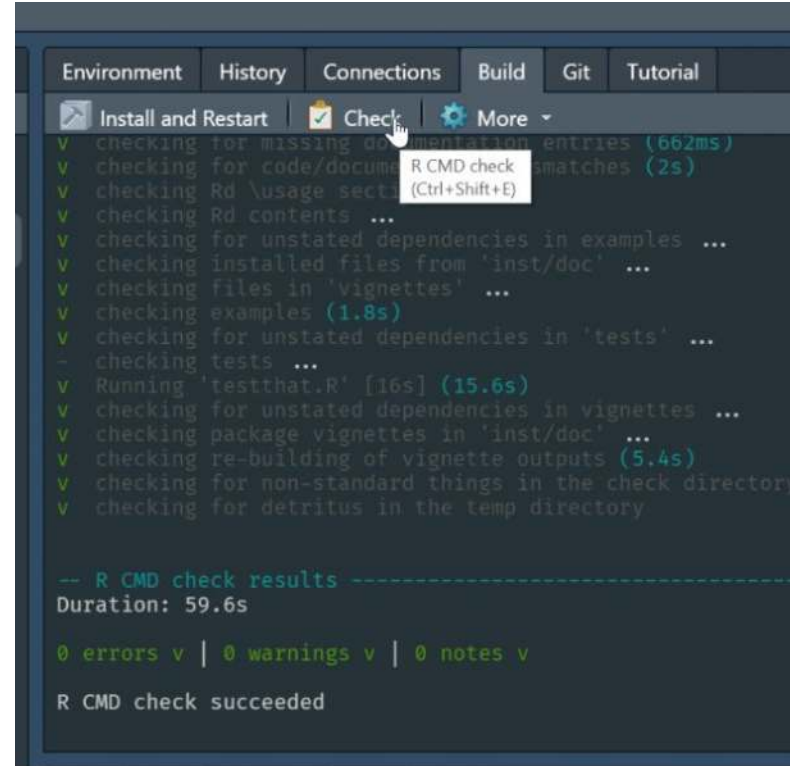
University of  
BRISTOL

# Overview

- Introduction
- Investigating
- Fixing
- What happened next?
- Conclusion

# Introduction

- To be accepted onto CRAN or Bioconductor R packages must pass R CMD check / `devtools::check()`
- Further info from my Code Club session <https://remlapmot.github.io/r-pkg-tips/>
- CRAN have special/pseudo-secret additional check settings
- First submit to <https://builder.r-hub.io/> and <https://win-builder.r-project.org/> fix then submit to CRAN then 🍷



```
Environment  History  Connections  Build  Git  Tutorial
Install and Restart  Check  More
v checking for missing documentation entries (662ms)
v checking for code/documentation mismatches (2s)
v checking Rd \usage sections
v checking Rd contents ...
v checking for unstated dependencies in examples ...
v checking installed files from 'inst/doc' ...
v checking files in 'vignettes' ...
v checking examples (1.8s)
v checking for unstated dependencies in 'tests' ...
- checking tests ...
v Running 'testthat.R' [16s] (15.6s)
v checking for unstated dependencies in vignettes ...
v checking package vignettes in 'inst/doc' ...
v checking re-building of vignette outputs (5.4s)
v checking for non-standard things in the check directory
v checking for detritus in the temp directory


-- R CMD check results --
Duration: 59.6s

0 errors v | 0 warnings v | 0 notes v

R CMD check succeeded
```

- 2 releases of OneSampleMR accepted onto CRAN ...
- ... then ... email from CRAN Team
  - New problem/s
  - 2 week deadline to fix otherwise package will be removed/archived and hence no longer available using `install.packages()`

CRAN package OneSampleMR

 Prof Brian Ripley <ripley@stats.ox.ac.uk>  
Sun 08/05/2022 08:49  
To: You  
Cc: CRAN@R-project.org

Dear maintainer,

Please see the problems shown on  
<[https://cran.r-project.org/web/checks/check\\_results\\_OneSampleMR.html](https://cran.r-project.org/web/checks/check_results_OneSampleMR.html)>.

Please correct before 2022-05-22 to safely retain your package on CRAN.

Packages in Suggests should be used conditionally: see 'Writing R Extensions'. This needs to be corrected even if the missing package(s) become available. It can be tested by checking with `_R_CHECK_DEPENDS_ONLY_=true`.

The CRAN Team

[Reply](#) | [Reply all](#) | [Forward](#)

# Investigating


- Go to package CRAN page
- Then to CRAN checks link



The screenshot shows a web browser window with the address bar displaying "cran.r-project.org/web/packages/OneSampleMR/index.html". The page title is "OneSampleMR: One Sample Mendelian Randomization and Instrumental Variable Analyse". The main content area contains a description of the package and a list of metadata fields.

**OneSampleMR: One Sample Mendelian Randomization and Instrumental Variable Analyse**

Useful functions for one-sample (individual level data) Mendelian randomization and instrumental variable analyses. The [conditional F-statistic](https://doi.org/10.1016/j.jeconom.2015.06.004), the multiplicative structural mean model Hernán and Robir stage residual inclusion estimators explained by Terza et al. (2008) [conditional F-statistic](https://doi.org/10.1016/j.jhealeco.2007.09.009).

Version: 0.1.2  
Depends: R (≥ 3.6.0)  
Imports: [Formula](#), [gmm](#), [ivreg](#), [lmtest](#), [msm](#)  
Suggests: [haven](#), [knitr](#), [lfe](#), [rmarkdown](#), [testthat](#) (≥ 3.0.0)  
Published: 2022-05-11  
Author: Tom Palmer  [aut, cre], Wes Spiller  [aut], Eleanor Sanderson  [aut]  
Maintainer: Tom Palmer <remlapmot at hotmail.com>  
BugReports: <https://github.com/remlapmot/OneSampleMR/issues/>  
License: [GPL \(≥ 3\)](#)  
URL: <https://github.com/remlapmot/OneSampleMR>, <https://remlapmot.github.io/OneSampleMR/>  
NeedsCompilation: no  
Materials: [README NEWS](#)  
CRAN checks: [OneSampleMR results](#)

- Error on 4 Linux sub-architectures
- Those weren't there a few days ago or when I sent in the 2 previous versions



CRAN Package Check Results for Package [OneSampleMR](#)

Last updated on 2022-05-10 13:50:43 CEST.

Flavor	Version	T <sub>install</sub>	T <sub>check</sub>	T <sub>total</sub>	Status	Flags
<a href="#">r-devel-linux-x86_64-debian-clang</a>	0.1.1	4.52	64.02	68.54	ERROR	
<a href="#">r-devel-linux-x86_64-debian-gcc</a>	0.1.1	3.45	48.58	52.03	ERROR	
<a href="#">r-devel-linux-x86_64-fedora-clang</a>	0.1.1			83.36	ERROR	
<a href="#">r-devel-linux-x86_64-fedora-gcc</a>	0.1.1			77.77	ERROR	
<a href="#">r-devel-windows-x86_64</a>	0.1.1	29.00	97.00	126.00	OK	
<a href="#">r-patched-linux-x86_64</a>	0.1.1	4.64	62.86	67.50	OK	
<a href="#">r-release-linux-x86_64</a>	0.1.1	4.17	62.42	66.59	OK	
<a href="#">r-release-macos-arm64</a>	0.1.1			29.00	OK	
<a href="#">r-release-macos-x86_64</a>	0.1.0			45.00	OK	
<a href="#">r-release-windows-x86_64</a>	0.1.1	27.00	95.00	122.00	OK	
<a href="#">r-oldrel-macos-arm64</a>	0.1.1			28.00	OK	
<a href="#">r-oldrel-macos-x86_64</a>	0.1.1			47.00	OK	
<a href="#">r-oldrel-windows-ix86+x86_64</a>	0.1.1	13.00	84.00	97.00	OK	

- (bottom of previous screen)
- Crucial lines:
  - NOTE: Package **suggested** (in Suggests list in DESCRIPTION file) but not available for checking: 'ivtools'
  - ERROR: Error processing vignette ... there is no package called 'ivtools'

### Additional issues

#### noSuggests

##### Check Details

Version: 0.1.1

Check: package dependencies

Result: NOTE

Package suggested but not available for checking: 'ivtools'

Flavors: [r-devel-linux-x86\\_64-debian-clang](#), [r-devel-linux-x86\\_64-debian-gcc](#)

Version: 0.1.1

Check: re-building of vignette outputs

Result: ERROR

Error(s) in re-building vignettes:

...

--- re-building 'compare-smm-fits.Rmd' using rmarkdown

Quitting from lines 18-20 (compare-smm-fits.Rmd)

Error: processing vignette 'compare-smm-fits.Rmd' failed with diagnostics:  
there is no package called 'ivtools'

--- failed re-building 'compare-smm-fits.Rmd'

- (part of) DESCRIPTION file

```
26 R (>= 3.0.0)
27 Imports:
28   Formula,
29   gmm,
30   ivreg,
31   lmtest,
32   msm
33 Suggests:
34   AER,
35   haven,
36   ivtools,
37   knitr,
38   lfe,
39   rmarkdown,
40   testthat (>= 3.0.0)
41 VignetteBuilder:
42   knitr
43 Config/testthat/edition: 3
44 Encoding: UTF-8
45 Roxygen: list(markdown = TRUE)
46 RoxygenNote: 7.1.2
```



- Investigate ivtools check results
- Error for the same 4 Linux sub-architectures
- Similar but not identical crucial line:
  - ERROR: Package **required** (in Imports list in DESCRIPTION file) but not available: 'ahaz'

CRAN Package Check Results for Package [ivtools](#)

Last updated on 2022-05-11 13:52:51 CEST.

Flavor	Version	T <sub>install</sub>	T <sub>check</sub>	T <sub>total</sub>	Status	Flags
<a href="#">r-devel-linux-x86_64-debian-clang</a>	2.3.0	0.42	11.74	12.16	ERROR	
<a href="#">r-devel-linux-x86_64-debian-gcc</a>	2.3.0	0.37	8.87	9.24	ERROR	
<a href="#">r-devel-linux-x86_64-fedora-clang</a>	2.3.0			13.65	ERROR	
<a href="#">r-devel-linux-x86_64-fedora-gcc</a>	2.3.0			12.79	ERROR	
<a href="#">r-devel-windows-x86_64</a>	2.3.0	34.00	126.00	160.00	OK	
<a href="#">r-patched-linux-x86_64</a>	2.3.0	26.72	95.62	122.34	OK	
<a href="#">r-release-linux-x86_64</a>	2.3.0	22.76	94.25	117.01	OK	
<a href="#">r-release-macos-arm64</a>	2.3.0			41.00	OK	
<a href="#">r-release-macos-x86_64</a>	2.3.0			57.00	OK	
<a href="#">r-release-windows-x86_64</a>	2.3.0	38.00	130.00	168.00	OK	
<a href="#">r-oldrel-macos-arm64</a>	2.3.0			51.00	OK	
<a href="#">r-oldrel-macos-x86_64</a>	2.3.0			74.00	OK	
<a href="#">r-oldrel-windows-ix86+x86_64</a>	2.3.0	64.00	165.00	229.00	OK	

Check Details

Version: 2.3.0

Check: package dependencies

Result: ERROR

Package required but not available: 'ahaz'

See section 'The DESCRIPTION file' in the 'Writing R Extensions' manual.

Flavors: [r-devel-linux-x86\\_64-debian-clang](#), [r-devel-linux-x86\\_64-debian-gcc](#), [r-devel-](#)

- Investigate ahaz check results
- Error on the same 4 Linux sub-architectures
- Crucial line:
  - Installation failed
- ... we have found the source of the error

cran.r-project.org/web/checks/check\_results\_ahaz.html

**CRAN Package Check Results for Package [ahaz](#)**

Last updated on 2022-05-11 13:52:42 CEST.

Flavor	Version	T <sub>install</sub>	T <sub>check</sub>	T <sub>total</sub>	Status	Flags
<a href="#">r-devel-linux-x86_64-debian-clang</a>	1.14	0.45	11.98	12.43	ERROR	
<a href="#">r-devel-linux-x86_64-debian-gcc</a>	1.14	0.52	9.06	9.58	ERROR	
<a href="#">r-devel-linux-x86_64-fedora-clang</a>	1.14			14.65	ERROR	
<a href="#">r-devel-linux-x86_64-fedora-gcc</a>	1.14			13.56	ERROR	
<a href="#">r-devel-windows-x86_64</a>	1.14	25.00	106.00	131.00	NOTE	
<a href="#">r-patched-linux-x86_64</a>	1.14	9.95	85.16	95.11	NOTE	
<a href="#">r-release-linux-x86_64</a>	1.14	10.22	85.12	95.34	NOTE	
<a href="#">r-release-macos-arm64</a>	1.14			37.00	NOTE	
<a href="#">r-release-macos-x86_64</a>	1.14			48.00	NOTE	
<a href="#">r-release-windows-x86_64</a>	1.14	24.00	103.00	127.00	NOTE	
<a href="#">r-oldrel-macos-arm64</a>	1.14			44.00	NOTE	
<a href="#">r-oldrel-macos-x86_64</a>	1.14			67.00	NOTE	
<a href="#">r-oldrel-windows-ix86+x86_64</a>	1.14	24.00	130.00	154.00	NOTE	

**Additional issues**

**BLAS**

**Check Details**

Version: 1.14  
 Check: whether package can be installed  
 Result: ERROR  
 Installation failed.

Flavors: [r-devel-linux-x86\\_64-debian-clang](#), [r-devel-linux-x86\\_64-debian-gcc](#), [r-devel](#)

- Click on one of the errors then on the installation log file
- Some C code has failed to build
  - maybe R-devel requires different settings/C code syntax
  - maybe CRAN have changed their setup

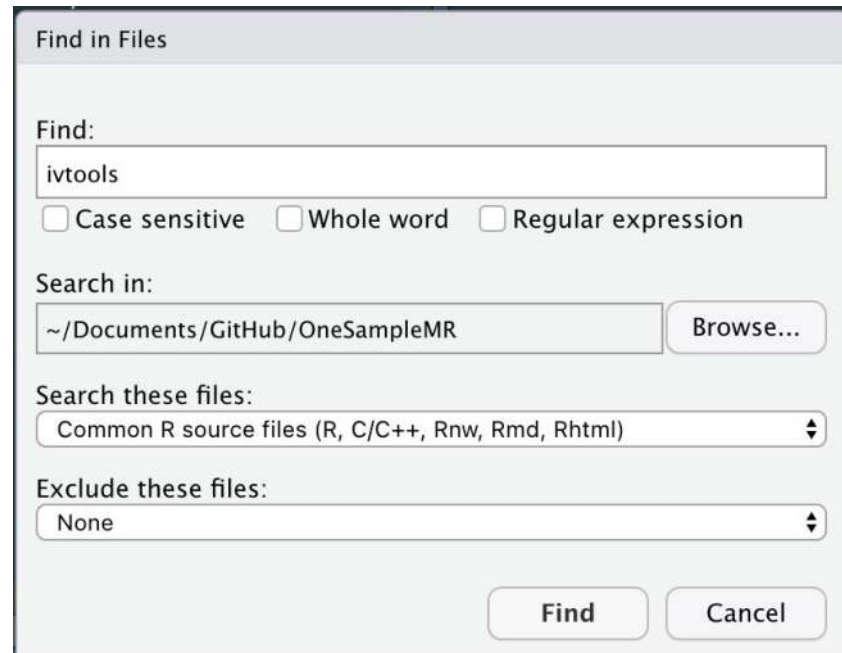
```

← → ↻ 🏠 🔒 r-project.org/nosvn/R.check/r-devel-linux-x86_64-debian-clang/ahaz-00ins
* installing to library '/home/hornik/tmp/R.check/r-devel-clang/Work/build/Packages'
* installing *source* package 'ahaz' ...
** package 'ahaz' successfully unpacked and MD5 sums checked
** using staged installation
** libs
make[1]: Entering directory '/tmp/Rtmp18ymNJ/R.INSTALL3fd8b71c803768/ahaz/src'
clang-14 -I"/home/hornik/tmp/R.check/r-devel-clang/Work/build/include" -DNDEBUG -I/u
ahaz.c:15:13: error: conflicting types for 'dgemv_'
extern void F77_SUB(dgemv)(const char *trans, const int *m, const int *n,
                ^
/home/hornik/tmp/R.check/r-devel-clang/Work/build/include/R_ext/RS.h:82:24: note: expa
#define F77_SUB(x)      F77_CALL(x)
                        ^
/home/hornik/tmp/R.check/r-devel-clang/Work/build/include/R_ext/RS.h:77:22: note: expa
#define F77_CALL(x)    x ## _
                        ^
<scratch space>:50:1: note: expanded from here
dgemv_
^
/home/hornik/tmp/R.check/r-devel-clang/Work/build/include/R_ext/BLAS.h:107:1: note: pr
F77_NAME(dgemv)(const char *trans, const int *m, const int *n,
^

```

# Fixing

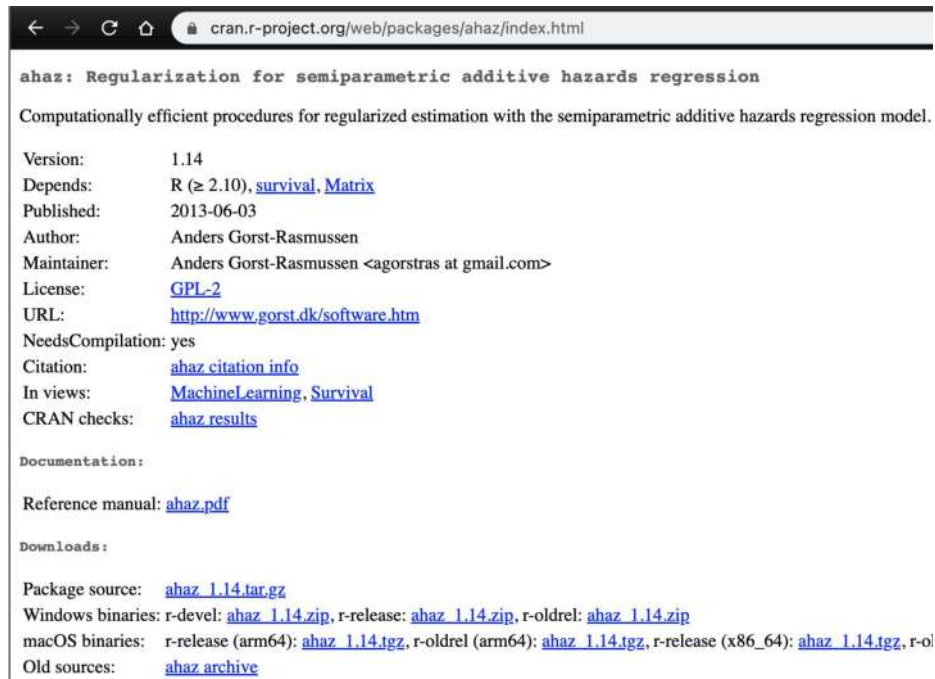
- Open OneSampleMR repo as RStudio project (i.e., double click .Rproj file)
- Search for "ivtools" using Find in Files (Ctrl/Cmd + Shift + F) (restrict to Common R source files)



- Only used in a vignette and some test files

```
Console Terminal x Find in Files x Jobs x
Results for "ivtools" in ~/Documents/GitHub/OneSampleMR Find Replace
~/Documents/GitHub/OneSampleMR/vignettes/compare-smm-fits.Rmd
19: library(ivtools)
22: ## Comparison fit using the ivtools package
24: * Example from the `ivtools::ivglm()` helpfile. First simulate some exar
~/Documents/GitHub/OneSampleMR/tests/testthat/test-tcps.R
3: # Data generation from the example in the ivtools::ivglm() helpfile —
16: # ivtools for comparison fit
17: library(ivtools)
52: # ivtools for comparison fit
53: library(ivtools)
88: # ivtools for comparison fit
89: library(ivtools)
126: # ivtools for comparison fit
127: library(ivtools)
~/Documents/GitHub/OneSampleMR/tests/testthat/test-tsri.R
3: # Data generation from the example in the ivtools::ivglm() helpfile —
16: # ivtools for comparison fit
17: library(ivtools)
85: # ivtools for comparison fit
86: library(ivtools)
122: # ivtools for comparison fit
123: library(ivtools)
161: # ivtools for comparison fit
162: library(ivtools)
~/Documents/GitHub/OneSampleMR/tests/testthat/test-msmm.R
589: # Data generation from the example in the ivtools::ivglm() helpfile
599: # ivtools for comparison fit
600: library(ivtools)
640: # Data generation from the example in the ivtools::ivglm() helpfile
~/Documents/GitHub/OneSampleMR/R/asmm.R
31: #' # Data generation from the example in the ivtools::ivglm() helpfile
~/Documents/GitHub/OneSampleMR/R/msmm.R
116: #' # Data generation from the example in the ivtools::ivglm() helpfile
```

- When were ahaz and ivtools last updated?
  - ivtools: 2020-02-24
  - ahaz: 2013-06-03
- Question to the group: what strategies would solve the error for
  - ahaz
  - ivtools
  - OneSampleMR
  - ... and will the solutions be the same?



The screenshot shows the CRAN package page for 'ahaz'. The browser address bar displays 'cran.r-project.org/web/packages/ahaz/index.html'. The page title is 'ahaz: Regularization for semiparametric additive hazards regression'. Below the title, a brief description states: 'Computationally efficient procedures for regularized estimation with the semiparametric additive hazards regression model.' The page lists various metadata fields: Version (1.14), Depends (R (≥ 2.10), survival, Matrix), Published (2013-06-03), Author (Anders Gorst-Rasmussen), Maintainer (Anders Gorst-Rasmussen <agorstras at gmail.com>), License (GPL-2), URL (http://www.gorst.dk/software.htm), NeedsCompilation (yes), Citation (ahaz citation info), In views (MachineLearning, Survival), and CRAN checks (ahaz results). There are sections for Documentation (Reference manual: ahaz.pdf) and Downloads (Package source: ahaz\_1.14.tar.gz, Windows binaries: r-devel: ahaz\_1.14.zip, r-release: ahaz\_1.14.zip, r-oldrel: ahaz\_1.14.zip, macOS binaries: r-release (arm64): ahaz\_1.14.tgz, r-oldrel (arm64): ahaz\_1.14.tgz, r-release (x86\_64): ahaz\_1.14.tgz, r-oldrel: ahaz\_1.14.tgz, Old sources: ahaz archive).

ahaz: Regularization for semiparametric additive hazards regression

Computationally efficient procedures for regularized estimation with the semiparametric additive hazards regression model.

Version: 1.14  
 Depends: R (≥ 2.10), [survival](#), [Matrix](#)  
 Published: 2013-06-03  
 Author: Anders Gorst-Rasmussen  
 Maintainer: Anders Gorst-Rasmussen <agorstras at gmail.com>  
 License: [GPL-2](#)  
 URL: <http://www.gorst.dk/software.htm>  
 NeedsCompilation: yes  
 Citation: [ahaz citation info](#)  
 In views: [MachineLearning](#), [Survival](#)  
 CRAN checks: [ahaz results](#)

Documentation:

Reference manual: [ahaz.pdf](#)

Downloads:

Package source: [ahaz\\_1.14.tar.gz](#)  
 Windows binaries: r-devel: [ahaz\\_1.14.zip](#), r-release: [ahaz\\_1.14.zip](#), r-oldrel: [ahaz\\_1.14.zip](#)  
 macOS binaries: r-release (arm64): [ahaz\\_1.14.tgz](#), r-oldrel (arm64): [ahaz\\_1.14.tgz](#), r-release (x86\_64): [ahaz\\_1.14.tgz](#), r-oldrel: [ahaz\\_1.14.tgz](#)  
 Old sources: [ahaz archive](#)

- My fix

- Removed use of ivtools in OneSampleMR and resubmitted to CRAN
- Back to no errors



CRAN Package Check Results for Package [OneSampleMR](#)

Last updated on 2022-05-15 08:54:57 CEST.

Flavor	Version	T <sub>install</sub>	T <sub>check</sub>	T <sub>total</sub>	Status	Flags
<a href="#">r-devel-linux-x86_64-debian-clang</a>	0.1.2	5.12	64.65	69.77	OK	
<a href="#">r-devel-linux-x86_64-debian-gcc</a>	0.1.2	3.57	48.78	52.35	OK	
<a href="#">r-devel-linux-x86_64-fedora-clang</a>	0.1.2			86.35	OK	
<a href="#">r-devel-linux-x86_64-fedora-gcc</a>	0.1.2			84.16	OK	
<a href="#">r-devel-windows-x86_64</a>	0.1.2	31.00	94.00	125.00	OK	
<a href="#">r-patched-linux-x86_64</a>	0.1.2	3.72	61.19	64.91	OK	
<a href="#">r-release-linux-x86_64</a>	0.1.2	4.64	62.09	66.73	OK	
<a href="#">r-release-macos-arm64</a>	0.1.2			34.00	OK	
<a href="#">r-release-macos-x86_64</a>	0.1.2			41.00	OK	
<a href="#">r-release-windows-x86_64</a>	0.1.2	24.00	113.00	137.00	OK	
<a href="#">r-oldrel-macos-arm64</a>	0.1.2			29.00	OK	
<a href="#">r-oldrel-macos-x86_64</a>	0.1.2			42.00	OK	
<a href="#">r-oldrel-windows-ix86+x86_64</a>	0.1.2	11.00	79.00	90.00	OK	

# What happened next?

- ahaz was updated



The screenshot shows a web browser window with the address bar displaying `cran.r-project.org/web/packages/ahaz/index.html`. The page title is **ahaz: Regularization for Semiparametric Additive Hazards Regression**. Below the title, a brief description reads: "Computationally efficient procedures for regularized estimation with the semiparametric additive hazards regression model." The page lists the following details:

- Version: 1.15
- Depends: R (≥ 2.10), [survival](#), [Matrix](#), methods
- Published: 2022-05-13
- Author: Anders Gorst-Rasmussen
- Maintainer: Anders Gorst-Rasmussen <agorstras at gmail.com>
- License: [GPL-2](#)
- NeedsCompilation: yes
- Citation: [ahaz.citation.info](#)
- In views: [MachineLearning](#), [Survival](#)
- CRAN checks: [ahaz.results](#)



## What was the fix in the ahaz package?

- Want to see diff in source code between v1.14 and v1.15
- But ahaz is not on GitHub/other source control site from the author
- Could make own Git/GitHub repo from CRAN sources (i.e., download .tar.gz files)
- Use R-hub unofficial CRAN mirror (/compare repo page)
- <https://github.com/cran/ahaz/compare>
- Compare tags v1.14 to v1.15
- Git/GitHub has 2 and 3 dot syntax
- <https://github.com/cran/ahaz/compare/1.14...1.15>

```
12 // # BLAS #
13 // #####
14 + extern double F77_NAME(ddot)(const int *n, const double *dx, const int *incx,
15                               const double *dy, const int *incy);
16
17 + #ifdef FC_LEN_T
18 + extern void F77_NAME(dgemv)(const char *trans, const int *m, const int *n,
19 +                             const double *alpha, const double *a, const int *lda,
20 +                             const double *x, const int *incx, const double *beta,
21 +                             double *y, const int *incy, size_t);
22 + #else
23 + extern void F77_NAME(dgemv)(const char *trans, const int *m, const int *n,
24 +                             const double *alpha, const double *a, const int *lda,
25 +                             const double *x, const int *incx, const double *beta,
26 +                             double *y, const int *incy);
27 + #endif
28
29 double dot(int n, const double *x, const double *y)
```

- ahaz now reports either ok or a check note

cran.r-project.org/web/checks/check\_results\_ahaz.html

CRAN Package Check Results for Package [ahaz](#)

Last updated on 2022-05-18 07:48:51 CEST.

Flavor	Version	T <sub>install</sub>	T <sub>check</sub>	T <sub>total</sub>	Status	Flags
<a href="#">r-devel-linux-x86_64-debian-clang</a>	1.15	11.92	89.13	101.05	OK	
<a href="#">r-devel-linux-x86_64-debian-gcc</a>	1.15	8.85	68.07	76.92	OK	
<a href="#">r-devel-linux-x86_64-fedora-clang</a>	1.15			127.26	NOTE	
<a href="#">r-devel-linux-x86_64-fedora-gcc</a>	1.15			82.65	NOTE	
<a href="#">r-devel-windows-x86_64</a>	1.15	25.00	103.00	128.00	OK	
<a href="#">r-patched-linux-x86_64</a>	1.15	9.10	86.70	95.80	OK	
<a href="#">r-release-linux-x86_64</a>	1.15	7.86	84.15	92.01	OK	
<a href="#">r-release-macos-arm64</a>	1.15			40.00	OK	
<a href="#">r-release-macos-x86_64</a>	1.15			54.00	OK	
<a href="#">r-release-windows-x86_64</a>	1.15	21.00	104.00	125.00	OK	
<a href="#">r-oldrel-macos-arm64</a>	1.15			34.00	OK	
<a href="#">r-oldrel-macos-x86_64</a>	1.15			54.00	OK	
<a href="#">r-oldrel-windows-ix86+x86_64</a>	1.15	23.00	130.00	153.00	OK	

**Check Details**

Version: 1.15  
 Check: compiled code  
 Result: NOTE  
 File 'ahaz/libs/ahaz.so':  
 Found no calls to: 'R\_registerRoutines', 'R\_useDynamicSymbols'

It is good practice to register native routines and to disable symbol search.

See 'Writing portable packages' in the 'Writing R Extensions' manual.  
 Flavors: [r-devel-linux-x86\\_64-fedora-clang](#), [r-devel-linux-x86\\_64-fedora-gcc](#)

- ivtools now reports ok



CRAN Package Check Results for Package [ivtools](#)

Last updated on 2022-05-18 07:49:00 CEST.

Flavor	Version	T <sub>install</sub>	T <sub>check</sub>	T <sub>total</sub>	Status	Flags
<a href="#">r-devel-linux-x86_64-debian-clang</a>	2.3.0	24.21	100.52	124.73	OK	
<a href="#">r-devel-linux-x86_64-debian-gcc</a>	2.3.0	19.59	74.95	94.54	OK	
<a href="#">r-devel-linux-x86_64-fedora-clang</a>	2.3.0			156.50	OK	
<a href="#">r-devel-linux-x86_64-fedora-gcc</a>	2.3.0			98.82	OK	
<a href="#">r-devel-windows-x86_64</a>	2.3.0	31.00	126.00	157.00	OK	
<a href="#">r-patched-linux-x86_64</a>	2.3.0	20.57	92.57	113.14	OK	
<a href="#">r-release-linux-x86_64</a>	2.3.0	22.56	93.44	116.00	OK	
<a href="#">r-release-macos-arm64</a>	2.3.0			41.00	OK	
<a href="#">r-release-macos-x86_64</a>	2.3.0			57.00	OK	
<a href="#">r-release-windows-x86_64</a>	2.3.0	29.00	125.00	154.00	OK	
<a href="#">r-oldrel-macos-arm64</a>	2.3.0			51.00	OK	
<a href="#">r-oldrel-macos-x86_64</a>	2.3.0			74.00	OK	
<a href="#">r-oldrel-windows-ix86+x86_64</a>	2.3.0	61.00	152.00	213.00	OK	

- TODO: Could put ivtools back in OneSampleMR
  - being more careful to remember to use conditionally in every case
  - the vignette build should not have failed
  - <https://r-pkgs.org/description.html#guarding-the-use-of-a-suggested-package>

### 8.1.1 Guarding the use of a suggested package

Inside a function in your own package, check for the availability of a suggested package with `requireNamespace("pkg", quietly = TRUE)`. There are two basic scenarios:

```
# the suggested package is required
my_fun <- function(a, b) {
  if (!requireNamespace("pkg", quietly = TRUE)) {
    stop(
      "Package \"pkg\" must be installed to use this function.",
      call. = FALSE
    )
  }
  # code that includes calls such as pkg::f()
}

# the suggested package is optional; a fallback method is available
my_fun <- function(a, b) {
  if (requireNamespace("pkg", quietly = TRUE)) {
    pkg::f()
  } else {
    g()
  }
}
```

# Conclusion

- Your package can be removed from/archived on CRAN because of a problem with one of its dependency packages ... which feels like it's not really *your fault!*
- Advice: include as few packages as possible in your Imports and Suggests lists