

Package ‘maketools’

February 25, 2024

Type Package

Title Exploring and Testing the Toolchain and System Libraries

Version 1.3.0

Description Helper functions that interface with the system utilities to learn about the local build environment. Lets you explore 'make' rules to test the local configuration, or query 'pkg-config' to find compiler flags and libs needed for building packages with external dependencies. Also contains tools to analyze which libraries that a installed R package linked to by inspecting output from 'ldd' in combination with information from your distribution package manager, e.g. 'rpm' or 'dpkg'.

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URL <https://jeroen.r-universe.dev/maketools>

BugReports <https://github.com/jeroen/maketools/issues>

Encoding UTF-8

Imports sys (>= 3.1)

RoxygenNote 7.3.1

VignetteBuilder knitr

Suggests curl, knitr, rmarkdown, testthat

Language en-US

NeedsCompilation no

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Repository CRAN

Date/Publication 2024-02-25 22:10:10 UTC

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diagnostics	<i>Diagnostics Report</i>
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Description

Print some diagnostics about your compiler environment. These are also shown when the `make tools` package is attached.

Usage

```
maketools_diagnostics()
```

See Also

Other maketools: [make\(\)](#), [pkgconfig](#), [r_config](#), [sysdeps](#)

find_logo	<i>Package tools</i>
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Description

Get some extra info about packages.

Usage

```
find_logo(path = ".")
```

Arguments

path	root directory of package
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make	<i>Make</i>
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Description

Compile C / C++ / Fortran source files using the compiler configured by your R Makeconf file.

Usage

```
make(target = "all", makefile = r_makeconf_path())
```

```
make_call(cmd = "$CC", args = "--version")
```

```
make_echo(cmd = "$CC")
```

```
make_info()
```

Arguments

target	name of output file that you want to make
makefile	path to the Makefile. Defaults to the Makeconf which R uses when building R packages.
cmd	command to invoke (may be a variable)
args	additional arguments for cmd

Details

The make function literally calls `make yourfile.o -f /path/to/R/Makeconf`. This is exactly what R does when building packages and hence the best way to test if the compiler is working.

See Also

Other maketools: [diagnostics](#), [pkgconfig](#), [r_config](#), [sysdeps](#)

Examples

```
# Test the CXX compiler
if(cxx_info()$available){
  testprog <- '#include <iostream>\nint main() {std::cout << "Hello World!";}'
  writeLines(testprog, con = 'testprog.cc')
  make('testprog')

# Test and cleanup
system('./testprog')
unlink('testprog*', recursive = TRUE)
}

# Run a program from a make variable
```

```
make_call('${CXX}', '--version')

# Where your makeconf is stored:
make_info()
```

pkgconfig

Query pkg-config

Description

Wrappers for the pkg-config utility to query information on C/C++ libraries that are available on your system.

Usage

```
pc_info()

pc_pkg_list()

pc_pkg_exists(pkg = "libcurl")

pc_pkg_version(pkg = "libcurl")

pc_pkg_cflags(pkg = "libcurl")

pc_pkg_libs(pkg = "libcurl", static = FALSE)

pc_pkg_info(pkg = "libcurl")
```

Arguments

pkg	names of the pkg-config libraries to query
static	get libs for static linking, i.e. include dependencies

See Also

Other maketools: [diagnostics](#), [make\(\)](#), [r_config](#), [sysdeps](#)

Examples

```
# Check if pkg-config is available
(info <- pc_info())
if(info$available)
  pc_pkg_list()
```

r_config	<i>R CMD Config</i>
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Description

Cross-platform wrappers for R CMD config to lookup the availability of the compiler.

Usage

```
cc_info()
cxx_info()
cxx11_info()
cxx14_info()
cxx17_info()
fc_info()
r_cmd_config(VAR = "--all")
```

Arguments

VAR value passed to R CMD config such as CXX or FC

See Also

Other maketools: [diagnostics](#), [make\(\)](#), [pkgconfig](#), [sysdeps](#)

Examples

```
# This runs 'R CMD CONFIG CXX'
r_cmd_config("CXX")

# Show C++ config:
cxx_info()
```

Description

Shows the external shared libraries that an installed R package is linked to by running `ldd` on the package `so` file. Then uses system package manager (e.g. `dpkg` or `rpm` or `brew`) to locate which system package that contains the binaries, headers, and (if available) sources for this library.

Usage

```
package_sysdeps(pkg, lib.loc = NULL)
```

```
package_sysdeps_string(pkg, lib.loc = NULL)
```

```
package_links_to(pkg, lib.loc = NULL)
```

Arguments

<code>pkg</code>	name of an installed R package
<code>lib.loc</code>	path to the R package directory for this package

Details

For common distributions, the output also includes a URL to the distro-homepage of the system package. Here we can typically find more information about the package, such as configuration options, dependencies, and custom patches applied by your distribution.

Because we use `ldd`, this only shows run-time dependencies of an installed R package. This is especially relevant if you distribute the compiled R package in binary form, because the same external libraries need to be available on the user/deployment machine. This tool does not show dependencies that are only needed at build-time, such as static or header-only libraries, and other utilities required to build the package.

See Also

Other maketools: [diagnostics](#), [make\(\)](#), [pkgconfig](#), [r_config](#)

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