

# Package ‘deepdep’

May 6, 2020

**Title** Visualise and Explore the Deep Dependencies of R Packages

**Version** 0.2.1

**Description** Provides tools for exploration of R package dependencies.

The main `deepdep()` function allows to acquire deep dependencies of any package and plot them in an elegant way.

It also adds some popularity measures for the packages e.g. in the form of download count through the 'cranlogs' package.

Uses the CRAN metadata database <<http://cran.r-project.org/>> and Bioconductor metadata <<http://bioconductor.org/>>.

Other data acquire functions are: `get_dependencies()`, `get_downloads()` and `get_description()`.

The `deepdep_shiny()` function runs shiny application that helps to produce a nice 'deepdep' plot.

**License** GPL-3

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.1.0

**Depends** R (>= 3.2.0)

**Imports** cranlogs, ggforce, ggplot2, ggraph, graphlayouts, httr, igraph, jsonlite, scales

**Suggests** BiocManager, shiny, shinycssloaders, covr, devtools, knitr, miniCRAN, plyr, rmarkdown, spelling, stringi, testthat (>= 2.1.0)

**VignetteBuilder** knitr

**URL** <https://dominikrafacz.github.io/deepdep/>,  
<https://github.com/DominikRafacz/deepdep>

**BugReports** <https://github.com/DominikRafacz/deepdep/issues>

**Language** en-GB

**NeedsCompilation** no

**Author** Dominik Rafacz [aut, cre],  
Hubert Baniecki [aut],  
Szymon Maksymiuk [aut],  
Mateusz Bakala [aut]

**Maintainer** Dominik Rafacz <dominikrafacz@gmail.com>

**Repository** CRAN

**Date/Publication** 2020-05-06 14:10:07 UTC

## R topics documented:

deepdep . . . . .	2
deepdep_shiny . . . . .	3
get_available_packages . . . . .	4
get_dependencies . . . . .	5
get_description . . . . .	6
get_downloads . . . . .	7
plot_dependencies . . . . .	7
plot_downloads . . . . .	9
print.available_packages . . . . .	10
print.deepdep . . . . .	11
print.package_dependencies . . . . .	12
print.package_description . . . . .	12
print.package_downloads . . . . .	13

<b>Index</b>	<b>14</b>
--------------	-----------

---

deepdep	<i>Acquire the dependencies of the package on any depth level</i>
---------	---

---

### Description

This function is an ultimate wrapper for [get\\_dependencies](#). It inherits all of the arguments and allows to recursively search for the dependencies at the higher level of depth.

### Usage

```
deepdep(
  package,
  depth = 1,
  downloads = FALSE,
  bioc = FALSE,
  local = FALSE,
  dependency_type = c("Depends", "Imports")
)
```

**Arguments**

package	A character. Name of the package that is on CRAN, Bioconductor repository or locally installed. See <code>bioc</code> and <code>local</code> arguments.
depth	An integer. Maximum depth level of the dependency. By default it's 1.
downloads	A logical. If TRUE add dependency downloads data. By default it's FALSE.
bioc	A logical value. If TRUE the Bioconductor dependencies data will be taken from the Bioconductor repository. For this option to work properly, <code>BiocManager</code> package needs to be installed.
local	A logical value. If TRUE only data of locally installed packages will be used (without API usage).
dependency_type	A character vector. Types of the dependencies that should be sought. Possibilities are: "Imports", "Depends", "Suggests", "Enhances", "LinkingTo". By default it's "Depends", "Imports".

**Value**

An object of `deepdep` class.

**See Also**

[get\\_dependencies](#)

**Examples**

```
library(deepdep)

dd_downloads <- deepdep("ggplot2")
head(dd_downloads)

dd_2 <- deepdep("ggplot2", depth = 2, downloads = TRUE)
plot_dependencies(dd_2, "circular")

dd_local <- deepdep("deepdep", local = TRUE)
plot_dependencies(dd_local)
```

---

deepdep\_shiny

*Run Shiny app*

---

**Description**

This function runs shiny app that helps to produce nice `deepdep` plot.

**Usage**

```
deepdep_shiny()
```

---

```
get_available_packages
```

*Get the list of available packages*

---

**Description**

Get names of packages that you have locally installed or that are available to be installed.

**Usage**

```
get_available_packages(bioc = FALSE, local = FALSE, reset_cache = FALSE)
```

**Arguments**

bioc	A logical value. If TRUE the Bioconductor dependencies data will be taken from the Bioconductor repository. For this option to work properly, BiocManager package needs to be installed.
local	A logical value. If TRUE only data of locally installed packages will be used (without API usage).
reset_cache	A logical value. If TRUE the cache will be cleared before obtaining the list of packages.

**Details**

Function uses caching - only the first usage scraps information from servers. Those objects are then saved locally in temporary file and further usages loads needed data from the file.

Arguments `bioc` and `local` cannot be TRUE simultaneously. If neither `local` nor `bioc` are TRUE, vector contains all packages available currently on CRAN. If `bioc` is TRUE, vector contains all packages available currently on CRAN and via Bioconductor. If `local` is TRUE, vector contains all of the packages that are currently installed.

**Value**

A character vector.

**Examples**

```
library(deepdep)

av <- get_available_packages()
head(av)
```

---

get_dependencies	<i>Acquire the dependencies of the package</i>
------------------	--

---

### Description

This function uses [get\\_description](#) and [get\\_downloads](#) to acquire the dependencies of the package (with their downloads).

### Usage

```
get_dependencies(  
  package,  
  downloads = TRUE,  
  bioc = FALSE,  
  local = FALSE,  
  dependency_type = c("Depends", "Imports")  
)
```

### Arguments

package	A character. Name of the package that is on CRAN, Bioconductor repository or locally installed. See <code>bioc</code> and <code>local</code> arguments.
downloads	A logical. If TRUE add package downloads data. By default it's TRUE.
bioc	A logical value. If TRUE the Bioconductor dependencies data will be taken from the Bioconductor repository. For this option to work properly, <code>BiocManager</code> package needs to be installed.
local	A logical value. If TRUE only data of locally installed packages will be used (without API usage).
dependency_type	A character vector. Types of the dependencies that should be sought. Possibilities are: "Imports", "Depends", "Suggests", "Enhances", "LinkingTo". By default it's "Depends", "Imports".

### Value

An object of `package_dependencies` class.

### See Also

[get\\_description](#) [get\\_downloads](#)

### Examples

```
library(deepdep)  
  
dependencies <- get_dependencies("htmltools", downloads = FALSE)  
dependencies
```

```
dependencies_local <- get_dependencies("deepdep", downloads = FALSE, local = TRUE)
dependencies_local
```

---

get_description	<i>Scrap the DESCRIPTION file and CRAN metadata of the package</i>
-----------------	--

---

### Description

This function uses api of **CRAN Data Base** to scrap the DESCRIPTION file and CRAN metadata of the package. It caches the results to speed the computation process.

### Usage

```
get_description(package, bioc = FALSE, local = FALSE, reset_cache = FALSE)
```

### Arguments

package	A character. Name of the package that is on CRAN, Bioconductor repository or locally installed. See bioc and local arguments.
bioc	A logical value. If TRUE the Bioconductor dependencies data will be taken from the Bioconductor repository. For this option to work properly, BiocManager package needs to be installed.
local	A logical value. If TRUE only data of locally installed packages will be used (without API usage).
reset_cache	A logical value. If TRUE the cache will be cleared before obtaining the list of packages.

### Value

An object of package\_description class.

### Examples

```
library(deepdep)

description <- get_description("ggplot2")
description

description_local <- get_description("deepdep", local = TRUE)
description_local
```

---

get_downloads	<i>Scrap the download data of the package</i>
---------------	---

---

**Description**

This function uses **API** of **CRAN Logs** to scrap the download logs of the package.

**Usage**

```
get_downloads(package)
```

**Arguments**

package      A character. Name of the package that is on CRAN.

**Value**

An object of package\_downloads class.

**Examples**

```
library(deepdep)

downloads <- get_downloads("ggplot2")
downloads
```

---

plot_dependencies	<i>Main plot function for a deepdep object</i>
-------------------	--

---

**Description**

Visualize dependency data from a deepdep object using ggplot2 and ggraph packages. Several tree-like layouts are available.

**Usage**

```
plot_dependencies(
  x,
  type = "circular",
  same_level = FALSE,
  reverse = FALSE,
  label_percentage = 1,
  show_version = FALSE,
  show_downloads = FALSE,
```

```
    ...
  )

## Default S3 method:
plot_dependencies(
  x,
  type = "circular",
  same_level = FALSE,
  reverse = FALSE,
  label_percentage = 1,
  show_version = FALSE,
  show_downloads = FALSE,
  ...
)

## S3 method for class 'character'
plot_dependencies(
  x,
  type = "circular",
  same_level = FALSE,
  reverse = FALSE,
  label_percentage = 1,
  show_version = FALSE,
  show_downloads = FALSE,
  ...
)

## S3 method for class 'deepdep'
plot_dependencies(
  x,
  type = "circular",
  same_level = FALSE,
  reverse = FALSE,
  label_percentage = 1,
  show_version = FALSE,
  show_downloads = FALSE,
  ...
)
```

### Arguments

x	A <a href="#">deepdep</a> object or a character package name.
type	A character. Possible values are <code>circular</code> and <code>tree</code> .
same_level	A logical. If TRUE links between dependencies on the same level will be added. By default it's FALSE.
reverse	A logical. If TRUE links between dependencies pointing from deeper level to more shallow level will be added. By default it's FALSE.



label\_percentage A numeric value between 0 and 1. A fraction of labels to be displayed. By default it's 1 (all labels displayed).

show\_version A logical. If TRUE required version of package will be displayed below package name. Defaults to FALSE.

show\_downloads A logical. If TRUE total number of downloads of packages will be displayed below package names. Defaults to FALSE.

... Other arguments passed to the deepdep function.

**Value**

A ggplot2, gg, ggraph, deepdep\_plot class object.

**Examples**

```
library(deepdep)

dd <- deepdep("ggplot2")
plot_dependencies(dd, "tree")

dd2 <- deepdep("ggplot2", depth = 2)
plot_dependencies(dd2, "circular")

## use local packages
plot_dependencies("deepdep", depth = 2, local = TRUE)

## show grand_total download count
plot_dependencies("deepdep", show_downloads = TRUE)
```

---

plot\_downloads *Plot download count of CRAN packages.*

---

**Description**

This function uses **API of CRAN Logs** to scrap the download logs of the packages and then plots the data. It works on objects of class character (vector), deepdep, package\_dependencies and package\_downloads.

**Usage**

```
plot_downloads(x, ...)

## Default S3 method:
plot_downloads(x, ...)
```

```
## S3 method for class 'deepdep'  
plot_downloads(x, from = Sys.Date() - 365, to = Sys.Date(), ...)  
  
## S3 method for class 'package_dependencies'  
plot_downloads(x, from = Sys.Date() - 365, to = Sys.Date(), ...)  
  
## S3 method for class 'package_downloads'  
plot_downloads(x, from = Sys.Date() - 365, to = Sys.Date(), ...)  
  
## S3 method for class 'character'  
plot_downloads(x, from = Sys.Date() - 365, to = Sys.Date(), ...)
```

### Arguments

x	A character vector. Names of the packages that are on CRAN.
...	Ignored.
from	A Date class object. From which date plot the data. By default it's one year back.
to	A Date class object. To which date plot the data. By default it's now.

### Value

A ggplot2 class object.

### Examples

```
library(deepdep)  
  
plot_downloads("htmltools")  
  
dd <- deepdep("ggplot2")  
plot_downloads(dd)
```

---

`print.available_packages`

*Print function for an object of available\_packages class*

---

### Description

Print function for an object of available\_packages class

### Usage

```
## S3 method for class 'available_packages'  
print(x, ...)
```

### Arguments

x                    An object of available\_packages class.  
...                   other

### Examples

```
library(deepdep)  
  
av <- get_available_packages()  
head(av)
```

---

`print.deepdep`                    *Print function for an object of deepdep class*

---

### Description

Print function for an object of deepdep class

### Usage

```
## S3 method for class 'deepdep'  
print(x, ...)
```

### Arguments

x                    An object of deepdep class.  
...                   other

### Examples

```
library(deepdep)  
  
dd <- deepdep("stringr")  
dd
```

---

```
print.package_dependencies
```

*Print function for an object of package\_dependencies class*

---

### **Description**

Print function for an object of package\_dependencies class

### **Usage**

```
## S3 method for class 'package_dependencies'  
print(x, ...)
```

### **Arguments**

x	An object of package_dependencies class.
...	other

### **Examples**

```
library(deepdep)  
  
get_dependencies("htmltools", downloads = TRUE)
```

---

```
print.package_description
```

*Print function for an object of package\_description class*

---

### **Description**

Print function for an object of package\_description class

### **Usage**

```
## S3 method for class 'package_description'  
print(x, ...)
```

### **Arguments**

x	An object of package_description class.
...	other

### Examples

```
library(deepdep)

description <- get_description("ggplot2")
description
```

---

```
print.package_downloads
```

*Print function for an object of package\_downloads class*

---

### Description

Print function for an object of package\_downloads class

### Usage

```
## S3 method for class 'package_downloads'
print(x, ...)
```

### Arguments

x	An object of package_downloads class.
...	other

### Examples

```
library(deepdep)

desc <- get_downloads("stringr")
desc
```

# Index

`deepdep`, [2](#), [8](#)

`deepdep_shiny`, [3](#)

`get_available_packages`, [4](#)

`get_dependencies`, [2](#), [3](#), [5](#)

`get_description`, [5](#), [6](#)

`get_downloads`, [5](#), [7](#)

`plot_dependencies`, [7](#)

`plot_downloads`, [9](#)

`print.available_packages`, [10](#)

`print.deepdep`, [11](#)

`print.package_dependencies`, [12](#)

`print.package_description`, [12](#)

`print.package_downloads`, [13](#)