

# Package ‘pkgDepTools’

April 15, 2020

**Type** Package

**Title** Package Dependency Tools

**Version** 1.52.0

**Description** This package provides tools for computing and analyzing dependency relationships among R packages. It provides tools for building a graph-based representation of the dependencies among all packages in a list of CRAN-style package repositories. There are also utilities for computing installation order of a given package. If the RCurl package is available, an estimate of the download size required to install a given package and its dependencies can be obtained.

**License** GPL-2

**Depends** methods, graph, RBGL

**Imports** graph, RBGL

**Suggests** Biobase, Rgraphviz, RCurl, BiocManager

**LazyLoad** Yes

**biocViews** Infrastructure, GraphAndNetwork

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## R topics documented:

|                     |   |
|---------------------|---|
| pkgDepTools-package | 2 |
| basicInstallOrder   | 2 |
| cleanPkgField       | 3 |
| getDownloadSize     | 3 |
| getInstallOrder     | 4 |
| makeDepGraph        | 4 |
| makePkgUrl          | 5 |
| parseContentLength  | 6 |

**Index**[7](#)


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pkgDepTools-package    *Package Dependency Tools*

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**Description**

This package provides tools for computing and analyzing dependency relationships among R packages. It provides tools for building a graph-based representation of the dependencies among all packages in a list of CRAN-style package repositories. There are also utilities for computing installation order of a given package. If the RCurl package is available, an estimate of the download size required to install a given package and its dependencies can be obtained.

**Details**

Package: pkgDepTools  
 Type: Package  
 License: GPL2

**Author(s)**

Seth Falcon Maintainer: Seth Falcon <sfalcon@fhrc.org>

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basicInstallOrder    *Complete Installation Order of a Given Package*

---

**Description**

Helper function to return the complete install order of a given package.

**Usage**

```
basicInstallOrder(pkg, depG)
```

**Arguments**

|      |   |
|------|---|
| pkg  | character string package name                 |
| depG | graphNEL instance as returned by makeDepGraph |

**Details**

Internal function.

**Value**

character vector of package names in a viable installation order.

**Author(s)**

Seth Falcon

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|               |   |
|---------------|---|
| cleanPkgField | <i>Clean Packages Names from a DESCRIPTION File Field</i> |
|---------------|---|

---

**Description**

Given the value from a field like 'Depends' in a package's DESCRIPTION file, return a character vector of package names with the version restrictions stripped and R removed.

**Usage**

```
cleanPkgField(val)
```

**Arguments**

|     |   |
|-----|---|
| val | character string parsed from a package's DESCRIPTION file containing package names and possible version specifiers. |
|-----|---|

**Details**

Internal function

**Warning**

FIXME: uses a private function from tools

**Author(s)**

Seth Falcon

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|                 |  |
|-----------------|--|
| getDownloadSize | <i>Get Size in MB of a URL Using RCurl</i> |
|-----------------|--|

---

**Description**

Returns the size in MB of the specified URL. Uses RCurl to parse the HTTP headers for Content-Length.

**Usage**

```
getDownloadSize(url)
```

**Arguments**

|     |  |
|-----|--|
| url | character vector giving the URL. This is not vectorized. |
|-----|--|

**Note**

Internal function.

**Author(s)**

Seth Falcon

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|                 |   |
|-----------------|---|
| getInstallOrder | <i>List package dependencies in install order</i> |
|-----------------|---|

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**Description**

This function uses a dependency graph created with `makeDepGraph` to list all (recursive) dependencies of a given package in an order suitable for installation.

**Usage**

```
getInstallOrder(pkg, depG, needed.only = TRUE)
```

**Arguments**

|                          |   |
|--------------------------|---|
| <code>pkg</code>         | character string name of package  |
| <code>depG</code>        | graphNEL instance as returned from <code>makeDepGraph</code> .  |
| <code>needed.only</code> | logical value. When TRUE, only those dependencies not currently installed are included in the list, this is the default. When FALSE the complete list of dependencies is given regardless of the set of currently installed packages. |

**Value**

a list with components:

|                         |   |
|-------------------------|---|
| <code>packages</code>   | character vector of package names in an order suitable for installation. The order is not unique. The names of the character vector are the estimated download sizes of each package. |
| <code>total.size</code> | When available, the total size in megabytes of all listed dependencies.   |

**Author(s)**

Seth Falcon

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|              |   |
|--------------|---|
| makeDepGraph | <i>Create a graph representing R package dependencies</i> |
|--------------|---|

---

**Description**

Given a list of CRAN-style repository URLs, this function creates a graph instance representing dependencies between packages in the repositories.

**Usage**

```
makeDepGraph(repList, suggests.only = FALSE, type =
getOption("pkgType"), keep.builtin = FALSE, dosize = TRUE)
```

**Arguments**

|               |  |
|---------------|--|
| replList      | a character vector of URLs pointing to CRAN-style repositories.  |
| suggests.only | logical value indicating whether only the "Suggests" field should be used. The default (FALSE) means that DESCRIPTION fields "Depends" and "Imports" are used. Note that "Suggests" is special in that its use is less regulated and the resulting graph is less likely to be a DAG (packages sometimes suggest each other). |
| type          | a character vector specifying the type of packages to search for in the repositories. Must be one of "source", "win.binary", or "mac.binary".  |
| keep.builtin  | logical value indicating whether or not packages that come with a default R installation should be included in the nodes of the dependency graph. The default, FALSE, is to remove these packages from the return result.  |
| dosize        | logical value. When TRUE, the function will attempt to estimate the download size of each package (requires the RCurl package). The size of each package is added as a node attribute to the graph.  |

**Value**

A graphNEL-class instance. If the dosize argument was set to TRUE, then an estimate of the download size of each package is stored as a node attribute of the graph. A missing value is used when the download size was not able to be determined as well as when the RCurl package is not available.

**Author(s)**

Seth Falcon

**Examples**

```
## Not run:
  deps <- makeDepGraph("http://cran.fhcrc.org", type="source")

## End(Not run)
```

---

makePkgUrl

*Create a URL for a Package in a CRAN-Style Repository*

---

**Description**

Given a CRAN-style package repository meta data matrix as returned by available.packages, return a character vector of complete URLs for each package.

**Usage**

```
makePkgUrl(pMat, type = getOption("pkgType"))
```

**Arguments**

|      |  |
|------|--|
| pMat | matrix as returned by available.packages   |
| type | character string, used to determine file extension. Should match the argument used to generate pMat. |

**Details**

Internal function.

**Author(s)**

Seth Falcon

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parseContentLength     *Parse HTTP Response Header for Content Length*

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**Description**

Given a string containing an HTTP response header, extract the "Content-Length" header and convert it to a numeric value. If no such header is found, return NA.

**Usage**

```
parseContentLength(h)
```

**Arguments**

h                      string containing the HTTP response header

**Details**

Internal function

**Author(s)**

Seth Falcon

# Index

## \*Topic **package**

pkgDepTools-package, 2

## \*Topic **utilities**

basicInstallOrder, 2

cleanPkgField, 3

getDownloadSize, 3

getInstallOrder, 4

makeDepGraph, 4

makePkgUrl, 5

parseContentLength, 6

basicInstallOrder, 2

cleanPkgField, 3

getDownloadSize, 3

getInstallOrder, 4

makeDepGraph, 4

makePkgUrl, 5

parseContentLength, 6

pkgDepTools (pkgDepTools-package), 2

pkgDepTools-package, 2