

Package ‘dockerfiler’

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Title Easy Dockerfile Creation from R

Version 0.2.5

Description Build a Dockerfile straight from your R session.
'dockerfiler' allows you to create step by step a Dockerfile, and provide convenient tools to wrap R code inside this Dockerfile.

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URL <https://thinkr-open.github.io/dockerfiler/>,
<https://github.com/ThinkR-open/dockerfiler>

BugReports <https://github.com/ThinkR-open/dockerfiler/issues>

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| | |
|-----------------|------------------------|
| compact_sysreqs | <i>Compact Sysreqs</i> |
|-----------------|------------------------|

Description

Compact Sysreqs

Usage

```
compact_sysreqs(
  pkg_installs,
  update_cmd = "apt-get update -y",
  install_cmd = "apt-get install -y",
  clean_cmd = "rm -rf /var/lib/apt/lists/*"
)
```

Arguments

| | |
|--------------|--|
| pkg_installs | pkg_sysreqs as vector, pak::pkg_sysreqs output |
| update_cmd | command used to update packages, "apt-get update -y" by default |
| install_cmd | command used to install packages, "apt-get install -y" by default |
| clean_cmd | command used to clean package folder, "rm -rf /var/lib/apt/lists/*" by default |

Value

vector of compacted command to run to install sysreqs

Examples

```
pkg_installs <- list("apt-get install -y htop", "apt-get install -y top")
compact_sysreqs(pkg_installs)
```

| | |
|------------|------------------------------|
| Dockerfile | <i>A Dockerfile template</i> |
|------------|------------------------------|

Description

A Dockerfile template

A Dockerfile template

Public fields

Dockerfile The dockerfile content.

Methods**Public methods:**

- `Dockerfile$new()`
- `Dockerfile$RUN()`
- `Dockerfile$ADD()`
- `Dockerfile$COPY()`
- `Dockerfile$WORKDIR()`
- `Dockerfile$EXPOSE()`
- `Dockerfile$VOLUME()`
- `Dockerfile$CMD()`
- `Dockerfile$LABEL()`
- `Dockerfile$ENV()`
- `Dockerfile$ENTRYPOINT()`
- `Dockerfile$USER()`
- `Dockerfile$ARG()`
- `Dockerfile$ONBUILD()`
- `Dockerfile$STOPSIGNAL()`
- `Dockerfile$HEALTHCHECK()`
- `Dockerfile$SHELL()`
- `Dockerfile$MAINTAINER()`
- `Dockerfile$custom()`
- `Dockerfile$COMMENT()`
- `Dockerfile$print()`
- `Dockerfile$write()`
- `Dockerfile$switch_cmd()`
- `Dockerfile$remove_cmd()`
- `Dockerfile$add_after()`
- `Dockerfile$clone()`

Method `new()`: Create a new Dockerfile object.

Usage:

```
Dockerfile$new(FROM = "rocker/r-base", AS = NULL)
```

Arguments:

FROM The base image.

AS The name of the image.

Returns: A Dockerfile object.

Method RUN(): Add a RUN command.

Usage:

```
Dockerfile$RUN(cmd)
```

Arguments:

cmd The command to add.

Returns: the Dockerfile object, invisibly.

Method ADD(): Add a ADD command.

Usage:

```
Dockerfile$ADD(from, to, force = TRUE)
```

Arguments:

from The source file.

to The destination file.

force If TRUE, overwrite the destination file.

Returns: the Dockerfile object, invisibly.

Method COPY(): Add a COPY command.

Usage:

```
Dockerfile$COPY(from, to, stage = NULL, force = TRUE)
```

Arguments:

from The source file.

to The destination file.

stage Optional. Name of the build stage (e.g., "builder") to copy files from. This corresponds to the `--from=` part in a Dockerfile COPY instruction (e.g., `COPY --from=builder /source /dest`). If NULL, the `--from=` argument is omitted.

force If TRUE, overwrite the destination file.

Returns: the Dockerfile object, invisibly.

Method WORKDIR(): Add a WORKDIR command.

Usage:

```
Dockerfile$WORKDIR(when)
```

Arguments:

when The working directory.

Returns: the Dockerfile object, invisibly.

Method EXPOSE(): Add a EXPOSE command.

Usage:

Dockerfile\$EXPOSE(port)

Arguments:

port The port to expose.

Returns: the Dockerfile object, invisibly.

Method VOLUME(): Add a VOLUME command.

Usage:

Dockerfile\$VOLUME(volume)

Arguments:

volume The volume to add.

Returns: the Dockerfile object, invisibly.

Method CMD(): Add a CMD command.

Usage:

Dockerfile\$CMD(cmd)

Arguments:

cmd The command to add.

Returns: the Dockerfile object, invisibly.

Method LABEL(): Add a LABEL command.

Usage:

Dockerfile\$LABEL(key, value)

Arguments:

key, value The key and value of the label.

Returns: the Dockerfile object, invisibly.

Method ENV(): Add a ENV command.

Usage:

Dockerfile\$ENV(key, value)

Arguments:

key, value The key and value of the label.

Returns: the Dockerfile object, invisibly.

Method ENTRYPOINT(): Add a ENTRYPOINT command.

Usage:

Dockerfile\$ENTRYPOINT(cmd)

Arguments:

cmd The command to add.

Returns: the Dockerfile object, invisibly.

Method USER(): Add a USER command.

Usage:

Dockerfile\$USER(user)

Arguments:

user The user to add.

Returns: the Dockerfile object, invisibly.

Method ARG(): Add a ARG command.

Usage:

Dockerfile\$ARG(arg, ahead = FALSE)

Arguments:

arg The argument to add.

ahead If TRUE, add the argument at the beginning of the Dockerfile.

Returns: the Dockerfile object, invisibly.

Method ONBUILD(): Add a ONBUILD command.

Usage:

Dockerfile\$ONBUILD(cmd)

Arguments:

cmd The command to add.

Returns: the Dockerfile object, invisibly.

Method STOPSIGNAL(): Add a STOPSIGNAL command.

Usage:

Dockerfile\$STOPSIGNAL(signal)

Arguments:

signal The signal to add.

Returns: the Dockerfile object, invisibly.

Method HEALTHCHECK(): Add a HEALTHCHECK command.

Usage:

Dockerfile\$HEALTHCHECK(check)

Arguments:

check The check to add.

Returns: the Dockerfile object, invisibly.

Method SHELL(): Add a SHELL command.

Usage:

Dockerfile\$SHELL(shell)

Arguments:

shell The shell to add.

Returns: the Dockerfile object, invisibly.

Method MAINTAINER(): Add a MAINTAINER command.

Usage:

Dockerfile\$MAINTAINER(name, email)

Arguments:

name, email The name and email of the maintainer.

Returns: the Dockerfile object, invisibly.

Method custom(): Add a custom command.

Usage:

Dockerfile\$custom(base, cmd)

Arguments:

base, cmd The base and command to add.

Returns: the Dockerfile object, invisibly.

Method COMMENT(): Add a comment.

Usage:

Dockerfile\$COMMENT(comment)

Arguments:

comment The comment to add.

Returns: the Dockerfile object, invisibly.

Method print(): Print the Dockerfile.

Usage:

Dockerfile\$print()

Returns: used for side effect

Method write(): Write the Dockerfile to a file.

Usage:

Dockerfile\$write(as = "Dockerfile", append = FALSE)

Arguments:

as The file to write to.

append boolean, if TRUE append to file.

Returns: used for side effect

Method switch_cmd(): Switch commands.

Usage:

Dockerfile\$switch_cmd(a, b)

Arguments:

a, b The commands to switch.

Returns: the Dockerfile object, invisibly.

Method `remove_cmd()`: Remove a command.

Usage:

`Dockerfile$remove_cmd(when)`

Arguments:

`when` The commands to remove.

Returns: the Dockerfile object, invisibly.

Method `add_after()`: Add a command after another.

Usage:

`Dockerfile$add_after(cmd, after)`

Arguments:

`cmd` The command to add.

`after` Where to add the cmd

Returns: the Dockerfile object, invisibly.

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

`Dockerfile$clone(deep = FALSE)`

Arguments:

`deep` Whether to make a deep clone.

Examples

```
my_dock <- Dockerfile$new()
```

| | |
|--------------------------------|-----------------------------------|
| <code>docker_ignore_add</code> | <i>Create a dockerignore file</i> |
|--------------------------------|-----------------------------------|

Description

Create a dockerignore file

Usage

```
docker_ignore_add(path)
```

Arguments

`path` Where to write the file

Value

The path to the `.dockerignore` file, invisibly.

Examples

```
## Not run:
  docker_ignore_add()

## End(Not run)
```

| | |
|----------------|---|
| dock_from_desc | <i>Create a Dockerfile from a DESCRIPTION</i> |
|----------------|---|

Description

Create a Dockerfile from a DESCRIPTION

Usage

```
dock_from_desc(
  path = "DESCRIPTION",
  FROM = paste0("rocker/r-ver:", R.Version()$major, ".", R.Version()$minor),
  AS = NULL,
  sysreqs = TRUE,
  repos = c(CRAN = "https://cran.rstudio.com/"),
  expand = FALSE,
  update_tar_gz = TRUE,
  build_from_source = TRUE,
  extra_sysreqs = NULL
)
```

Arguments

| | |
|-------------------|---|
| path | path to the DESCRIPTION file to use as an input. |
| FROM | The FROM of the Dockerfile. Default is FROM rocker/r-ver:R.Version()\$major.R.Version()\$minor. |
| AS | The AS of the Dockerfile. Default it NULL. |
| sysreqs | boolean. If TRUE, the Dockerfile will contain sysreq installation. |
| repos | character. The URL(s) of the repositories to use for options("repos"). |
| expand | boolean. If TRUE each system requirement will have its own RUN line. |
| update_tar_gz | boolean. If TRUE and build_from_source is also TRUE, an updated tar.gz is created. |
| build_from_source | boolean. If TRUE no tar.gz is created and the Dockerfile directly mount the source folder. |
| extra_sysreqs | character vector. Extra debian system requirements. Will be installed with apt-get install. |

Value

Dockerfile

dock_from_renv *Create a Dockerfile from an renv.lock file*

Description

Create a Dockerfile from an renv.lock file

Usage

```
dock_from_renv(
  lockfile = "renv.lock",
  distro = NULL,
  FROM = "rocker/r-base",
  AS = NULL,
  sysreqs = TRUE,
  repos = c(CRAN = "https://cran.rstudio.com/"),
  expand = FALSE,
  extra_sysreqs = NULL,
  use_pak = FALSE,
  user = NULL,
  dependencies = NA,
  sysreqs_platform = "ubuntu",
  renv_version
)
```

Arguments

| | |
|---------------|--|
| lockfile | Path to an renv.lock file to use as an input.. |
| distro | <ul style="list-style-type: none"> • deprecated - only debian/ubuntu based images are supported |
| FROM | Docker image to start FROM Default is FROM rocker/r-base |
| AS | The AS of the Dockerfile. Default it NULL. |
| sysreqs | boolean. If TRUE, the Dockerfile will contain sysreq installation. |
| repos | character. The URL(s) of the repositories to use for options("repos"). |
| expand | boolean. If TRUE each system requirement will have its own RUN line. |
| extra_sysreqs | character vector. Extra debian system requirements. Will be installed with apt-get install. |
| use_pak | boolean. If TRUE use pak to deal with dependencies during renv::restore(). FALSE by default |
| user | Name of the user to specify in the Dockerfile with the USER instruction. Default is NULL, in which case the user from the FROM image is used. |
| dependencies | What kinds of dependencies to install. Most commonly one of the following values: <ul style="list-style-type: none"> • NA: only required (hard) dependencies, |

- TRUE: required dependencies plus optional and development dependencies,
- FALSE: do not install any dependencies. (You might end up with a non-working package, and/or the installation might fail.)

sysreqs_platform

System requirements platform.ubuntu by default. If NULL, then the current platform is used. Can be : "ubuntu-22.04" if needed to fit with the FROM Operating System. Only debian or ubuntu based images are supported

renv_version

character. The renv version to use in the generated Dockerfile. By default, it is set to the version specified in the renv.lock file. If the renv.lock file does not specify a renv version, the version of renv bundled with dockerfiler, specifically 1.0.3, will be used. If you set it to NULL, the latest available version of renv will be used.

Details

System requirements for packages are provided through RStudio Package Manager via the pak package. The install commands provided from pak are added as RUN directives within the Dockerfile.

The R version is taken from the renv.lock file. Packages are installed using renv::restore() which ensures that the proper package version and source is used when installed.

Value

A R6 object of class Dockerfile.

Examples

```
## Not run:
dock <- dock_from_renv("renv.lock", distro = "xenial")
dock$write("Dockerfile")

## End(Not run)
```

get_sysreqs

Get system requirements

Description

This function retrieves information about the system requirements using the pak::pkg_sysreqs().

Usage

```
get_sysreqs/packages, quiet = TRUE, batch_n = 30)
```

Arguments

| | |
|----------|--|
| packages | character vector. Packages names. |
| quiet | Boolean. If TRUE the function is quiet. |
| batch_n | numeric. Number of simultaneous packages to ask. |

Value

A vector of system requirements.

| | |
|------------------|---------------------------|
| parse_dockerfile | <i>Parse a Dockerfile</i> |
|------------------|---------------------------|

Description

Create a Dockerfile object from a Dockerfile.

Usage

```
parse_dockerfile(path)
```

Arguments

path path to the Dockerfile

Value

A Dockerfile object

Examples

```
parse_dockerfile(system.file("Dockerfile", package = "dockerfiler"))
```

| | |
|---|---|
| r | <i>Turn an R call into an Unix call</i> |
|---|---|

Description

Turn an R call into an Unix call

Usage

```
r(code)
```

Arguments

code the function to call

Value

an unix R call

Examples

```
r(print("yeay"))  
r(install.packages("plumber", repo = "http://cran.irsn.fr/"))
```

renv

Internalised renv

Description

<https://rstudio.github.io/renv/reference/vendor.html?q=vendor>

Usage

```
renv
```

Format

An object of class environment of length 1446.

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