

# Cheatsheet: fast container builds for R

## docker command line

### Run container interactively

```
docker run -it \
namespace/repo:tag
```

### Run rocker/rstudio container

```
docker run --rm -p 8787:8787 \
-it -e PASSWORD=mypassword \
rocker/rstudio
```

### Build from Dockerfile

```
docker build \
-t namespace/repo:tag .
```

## Convenient R commands

### Dockerfile from DESCRIPTION file

```
dockerfiler::dock_from_desc()
```

### Package system requirements

```
pak::pkg_system_requirements(
  "DT", "ubuntu", "20.04")
```

### Reducing image size

```
- Install2.r: rm -rf /tmp/downloaded_packages
- RSPM:
strip /usr/local/lib/R/site-library/*/libs/*.so
- apt-get: rm -rf /var/lib/apt/lists/*
```

### Acknowledgements

[Rocker](#) and [r2u](#) are mainly developed by [Carl Boettiger](#) and [Dirk Eddebuettel](#). This cheatsheet was created by [Geert van Geest](#)

## Dockerfile examples

### apt-get

interacts with the system package manager, that usually includes R packages

```
FROM ubuntu
```

```
RUN apt-get update \
&& apt-get install -y \
--no-install-recommends \
r-cran-rmarkdown \
r-cran-dt \
r-bioc-biostings
```

```
FROM r-base:latest
```

```
RUN apt-get update \
&& apt-get install -y \
--no-install-recommends \
r-cran-rmarkdown \
r-cran-dt \
r-bioc-biostings
```

```
FROM rocker/rstudio:4
```

```
RUN install2.r \
rmarkdown \
DT
```

```
FROM rocker/r-bspm:f37
```

```
RUN R -e \
'install.packages("DT")'
```

```
FROM eddelbuettel/r2u:jammy
```

```
RUN install2.r \
rmarkdown \
DT Biostings
```

### Binary or source installation?

For most applications, a *binary installation is recommended*. It's faster and it's easier to handle dependencies.

### install2.r/install.r scripts







Helpers for installing R packages ([littler](#) package). All options [here](#).

## Choosing your base image

The base images below have many different characteristics. Refer to their specifications for a full overview.

*fastest!* 

: default  
bioconductor support

	rocker				r2u
	<a href="#">Versioned</a>	<a href="#">Base</a>	<a href="#">rocker/r-ubuntu</a>	<a href="#">rocker/r-bspm</a>	<a href="#">eddelbuettel/r2u</a>
apt-get install	No	Yes 	Yes 	Yes 	Yes 
repo install2.r or install.packages()	RSPM (binary)	CRAN (source)	CRAN (source)	package manager  (binary)	 r2u (binary)
base image	ubuntu	debian	ubuntu	debian, ubuntu, fedora, opensuse	ubuntu

