

# Cheat sheet: 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 .
```

## 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 rocker/r2u:jammy
```

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

## Convenient R commands

### Dockerfile from DESCRIPTION file

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

### Package system requirements

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

### Binary or source installation?

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

: default bioconductor support







### 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!* 

	Versioned	Base	rocker/r-ubuntu	rocker/r-bspm	rocker/r2u
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

### 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 Eddebuetel](#). This cheat sheet was created by [Geert van Geest](#)

