

Update: Bioconductor Images

Nitesh Turaga

<https://bioconductor.org/help/docker>

New images

In the same spirit as "**bioconductor_full**" i.e all system dependencies

- ★ bioconductor/bioconductor_docker:devel
- ★ bioconductor/bioconductor_docker:RELEASE_3_10


Cmd:

```
docker pull bioconductor/bioconductor_docker:devel
```

Why new images?

- **Maintenance** : Chain of inheritance was too complicated for easy maintenance.
 - rocker/rstudio --> bioconductor/bioconductor_docker
 - Remove intermediate docker images, (devel_core2, etc)
- **Size**: Keep image size still in a manageable.
- **Best practices**: Dockerfile with standards , versioning, deprecation cycle
- **Naming convention**: Better naming convention


Reproducibility of Dockerfile

```
# Version is 3.11.0 because this is the first iteration of the bioconductor devel Dockerfile
LABEL name="bioconductor/bioconductor_docker" \
      version="3.11.1" \ 
      url="https://github.com/Bioconductor/bioconductor_docker" \
      vendor="Bioconductor Project" \
      maintainer="maintainer@bioconductor.org" \
      description="Bioconductor docker image with system dependencies to install most packages." \
      license="Artistic-2.0"
```

~ DESCRIPTION

Reproducibility of Dockerfile

```
# Version is 3.11.0 because this is the first iteration of the bioconductor devel Dockerfile
LABEL name="bioconductor/bioconductor_docker" \
      version="3.11.1" \
      url="https://github.com/Bioconductor/bioconductor_docker" \
      vendor="Bioconductor Project" \
      maintainer="maintainer@bioconductor.org" \
      description="Bioconductor docker image with system dependencies to install most packages." \
      license="Artistic-2.0"
```



Reproducibility of Dockerfile

```
# Version is 3.11.0 because this is the first iteration of the bioconductor devel Dockerfile
LABEL name="bioconductor/bioconductor_docker" \
      version="3.11.1" \
      url="https://github.com/Bioconductor/bioconductor_docker" \
      vendor="Bioconductor Project" \
      maintainer="maintainer@bioconductor.org" \
      description="Bioconductor docker image with system dependencies to install most packages." \
      license="Artistic-2.0" ←
```

Contribute Images with familiarity

- Images ~ packages
- Contribute images through the contributions page.

How to contribute: https://github.com/Bioconductor/bioconductor_docker/blob/master/best_practices.md

'devel' build variables

- Recently added "devel" build variables
- Builds packages **a little more like** the Linux nightly builder now.
- Easy for maintainers to reproduce bugs,

Eg: <https://github.com/Bioconductor/Rsamtools/issues/16>

NOTE: It still has a long way to go before emulating the build system perfectly.

Complications

- The way packages are installed is different on the Linux build machine.
 - It pulls the latest update on git.bioconductor.org, not a `BiocManager::install`.
- No vignette builder currently
- It's important to share the "host-site-library" in the correct way to mount volumes for this to work.

Links

Github:

https://github.com/Bioconductor/bioconductor_docker

Dockerhub:

https://hub.docker.com/repository/docker/bioconductor/bioconductor_docker

Bioconductor website:

<http://bioconductor.org/help/docker/>

How to contribute images to Bioconductor:

https://github.com/Bioconductor/bioconductor_docker/blob/master/best_practices.md

Q&A

1. Are singularity images available? Do we have to worry about security issues with Docker?

Yes, singularity images are available. <http://bioconductor.org/help/docker/#singularity>

2. What kind of images can we contribute?

Extending the image with just a set of packages is not very useful, but extending with additional system dependencies and workflows could be a very useful contribution.

3. How many versions do we foresee per release/devel cycle?

Not too many, they are pretty stable. Only time we'd update is if there was a bug fix.