UPGRADING TO R 4.0.0

A WORKED EXAMPLE ON UBUNTU 19.10

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R⁴ Video Lightning Talk
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What is going on?

- R 4.0.0 was released two days
- A lot of ‘sturm and drang’ on social media
- Sadly a lot more noise than signal
- Trying to help with a simple (yet real) example
My machine(s)

- Upgrade on my laptop: about 70 mins for 500+ packages
- Now: main workstation / server with about 680 packages
- We will do this “live” i.e. I will record the steps
- It runs Ubuntu 19.10 so installation is from source
- It upgrades from CRAN frequently so libraries up to date etc
Your machine, your responsibility

- We are venturing into system administration here
- Do not follow or repeat if unsure of commands / context
- *You can* try dry-runs in Docker, a virtual machine, an old box
- *Do that!* if at all unsure
- First rule: Don’t brick a working system
R and its tools are very mature

- CRAN and R are tested *exceptionally* well
- These components work, and work with each other
- Don’t fall for *Fear, Uncertainty and Doubt*
- This is not hard or impossible
Lastly

This is not ...

• A tutorial for use on Windows and binary packages
• A tutorial for use on data scientist laptops
• A tutorial for another random other Linux distro
• An example for using c2d4u PPA as it is not yet R 4.0.0 ready
• But it should apply where
  • R itself and key (“r-recommended”) packages are binaries
  • Everything else is sources
Tweets yesterday

Christopher D. Long @octonion · Apr 25
I have a lot of R packages installed, so the upgrade to R 4.0 is taking a while, but so far it’s gone quite smoothly.

Robert Frey @RobertFrey40 · Apr 25
I’m glad to hear it. I’m planning to do an upgrade here over the weekend, so if it’s going smoothly, that makes me feel better.

Christopher D. Long @octonion · Apr 25
I used the @eddelsiett PPA to upgrade the R binaries I had installed (Linux Ubuntu 18.04), then ran R’s package updater.

We detail ‘how’

And show it live

On Ubuntu 19.10
Key Functions

```r
available.packages()  # query repos for avail. versions
installed.packages()  # query what you have
update.packages()     # workhorse we will use to upgrade
install.packages()    # its cousin

options(Ncpus=parallel::detectCores())  # use all cores
```

It really is worth learning about these. Base R has all it takes to interact with repos in a controlled, planned, managed, ... way. Take advantage!
Key commands

```r
### Preparation: ensure OS and R pkgs are current
sudo apt update && sudo apt dist-upgrade  # OS
update.r                                # CRAN

### Then the actual upgrade: 'r-base' .deb packages
sudo add-apt-repository --yes "ppa:edd/r-4.0"
sudo apt dist-upgrade

### R side, either Rscript or in R
Rscript -e 'upgrade.package(checkBuilt=TRUE, ask=FALSE)'
```
BioC lacks R release a little

- Current BioC matches R 3.6.3
- So we need to switch to BioC ‘devel’

### Installation

To install this package, start R (version "4.0") and enter:

```r
if (!requireNamespace("BiocManager", quietly = TRUE))
  install.packages("BiocManager")

# The following initializes usage of Bioc devel
BiocManager::install(version='devel')

BiocManager::install("Biobase")
```

For older versions of R, please refer to the appropriate Bioconductor release.

Upgrade Experience

- Straightforward and without hickups
- No Fear, Uncertainty, Doubt
- Enjoy this treasure chest curated by CRAN Admins & R Core
- To whom we say Thank You for all the hard work leading to this
Thank you!

slides  http://dirk.eddelbuettel.com/presentations/
web    http://dirk.eddelbuettel.com/
mail   dirk@eddelbuettel.com
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