



**Barcelona
Supercomputing
Center**

Centro Nacional de Supercomputación

R tools users meeting

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Agenda

1. Ice-breaker
2. News
 - startR
 - s2dverification & easyNCDF
3. User presentation: Using R in Visual Studio Code [Lluís Palma]
4. Q&A

Ice-breaker

Welcome to the R \geq 4.0.0 world

- R 4.0.0 was released on 24th April 2020, and it's time for us to migrate to it.
- The latest version, 4.1.2, has been installed in Nord3v2 BUT it is almost empty still.
- You can find all the changes in CRAN's official [NEWS](#) if you have time and patience.
- Important features
 - A new syntax for specifying raw character strings (ex01)
 - Imported string data is no long converted to factors (ex02)
 - Normalization of matrix and array types (ex03)
 - Cairo graphics devices have been updated → different font and more support to symbols (ex04)
 - A refreshed color palette for charts (ex05)
 - An enhanced reference counting system & performance improvements → make R run faster
- Ref: <https://blog.revolutionanalytics.com/2020/04/r-400-is-released.html>

startR

New release 2.2.0

- v2.2.0
 - Installed under WS_R_3.6.1 and Nord3v2_R_3.6.2
 - Use the latest installed version (delete the local installation if you have it under `~/R/x86_64-pc-linux-gnu-library/3.6/`)
 - Read News <https://earth.bsc.es/gitlab/es/startR/-/blob/master/NEWS.md>

bugfixes

- Wrong output at NAs by Compute()

Status: Solved in master branch, not in installed version yet

If the data had NAs and Compute() was used, the NAs were substituted by 0 before computation. Not sure if it was a long-term or recent problem since it is derived from the package “bigmemory”.

- Reshape the metadata

Status: Solved and under test, in branch [develop-metadata-reshape](#)

Start() provides the reshaping parameters “merge_across_dims” and “split_multiselected_dims”. while only the data was reshaped but not metadata.

See more details in issue 127 <https://earth.bsc.es/gitlab/es/startR/-/issues/127>

Reminder: The metadata can be obtained by Start() param “return_vars”.

s2dverification & easyNCDF

New release

New release due to CRAN's requirement. Nothing changed except some documentation.

- s2dverification: v2.10.1
- easyNCDF: v0.1.1

Using R in Visual Studio Code

Introduction

Visual Studio Code is a lightweight but powerful source code editor which runs on your desktop and is available for Windows, macOS and Linux. It comes with built-in support for JavaScript, TypeScript and Node.js and has a rich ecosystem of extensions for other languages (such as C++, C#, Java, Python, PHP, Go) and runtimes (such as .NET and Unity). Begin your journey with VS Code with these [introductory videos](#).

Interesting features for BSC/R users:

- Shiny apps visualization
- A TONE of free & easy to install extensions; some recommendations:
 - R, R tools & R debugger
 - gitlens
 - code spell checker
 - Vim (if you're into it ٠_٠)
- Fast and Easy to use when working remotely
- Git integration.
- R support, syntax highlighter and compiler
 - (not working remotely, working on it with kim)
- Snippets and tasks
- Setting sync through your git account



**Plain
VSCode** 

**VSCode with
extensions**

Introduction

- and lots of color themes...



The screenshot displays the RStudio environment. On the left, a file explorer shows a project structure with folders like 'dl4ds', 'ecubevis', and 'jpter-notebooks'. The main editor window contains R code for a function that processes file dates. A settings menu is open, highlighting 'Color Theme [Ctrl+K Ctrl+T]'. The output console at the bottom shows an error message: '[Error - 09:37:39] Starting client failed. Launching server using command dotnet failed.' A notification box in the bottom right corner states 'Couldn't start client R Tools' with the source 'R Tools (Extension)'.

```
file_dates.fcst <- paste0(recipe$date$fcst_year, recipe$date$fcst_month, recipe$date$fcst_day)
file_dates.fcst <- add_dims(file_dates.fcst, "fcst")
} else {
file_dates.fcst <- NULL
info(logger,
| | | paste("fcst_year empty in the recipe, creating empty fcst object..."))
}

return(list(hcst=file_dates,fcst=file_dates.fcst))
## [rdo] document header of fun
}

# adds the correspondent dims to each sdate array
add_dims <- function(data, type){
  if (typeof == "hcst"){

```

Settings [Ctrl+,]
Online Services Settings
Telemetry Settings
Extensions [Ctrl+Shift+X]
Keyboard Shortcuts [Ctrl+K Ctrl+S]
Migrate Keyboard Shortcuts from...
User Snippets
Color Theme [Ctrl+K Ctrl+T]
File Icon Theme
Product Icon Theme
Settings Sync is On

[Error - 09:37:39] Starting client failed
Launching server using command dotnet failed.

Couldn't start client R Tools
Source: R Tools (Extension)

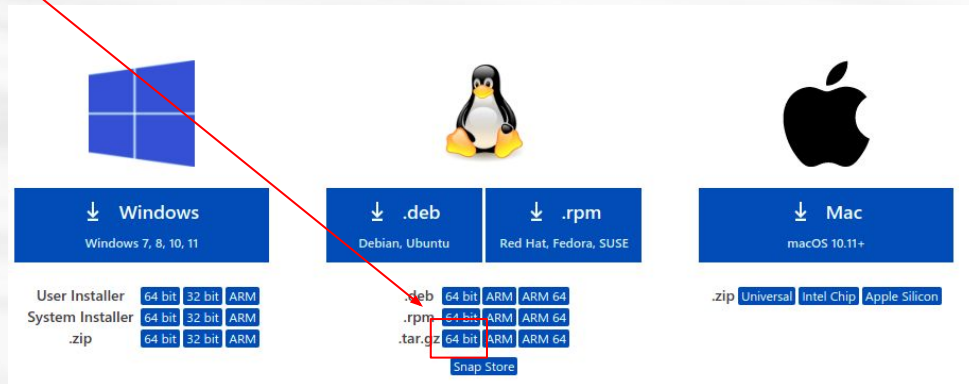
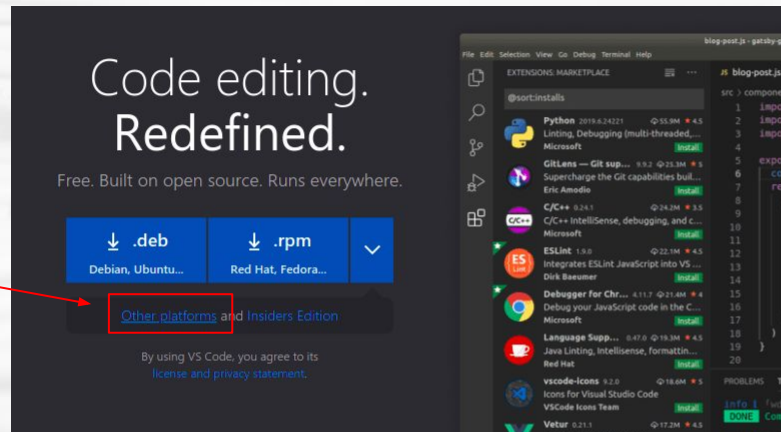
Installation: WS and BSC laptop

1. Go to <https://code.visualstudio.com/>
2. Click on Other platforms.
3. Download the 64 bit tar.gz
4. Untar de file in the desired installation dir

```
tar -xvf code-stable-x64-1637137380.tar.gz
```

5. Run VS code
 - a. `./VSCode-linux-x64/bin/code`
6. Optional: create an alias

```
alias vscode='./VSCode-linux-x64/bin/code'
```



RStudio

RStudio

1) From the workstation:

- module load RStudio
- module load R/3.6.1-foss-2015a-bare
- rstudio &

2) From laptop:

- Follow steps to use workstation remotely:

<https://earth.bsc.es/wiki/doku.php?id=computing:workstationsgraphicallyremotely>

- Follow steps 1 (above)

Q & A

Next meeting: 7th Apr. 2022 (11 am)