

R PACKAGE MANAGEMENT IN A VALIDATED ENVIRONMENT

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AGENDA

- Validation Environment
- Why is it important?
- Challenges
- Process Flow
- Key Configuration
- Recommendations
- Q&A

VALIDATION ENVIRONMENT

- Credibility and Compliance
- Software version
- Standardised results
- Validation success



WHY IS IT IMPORTANT?



PROCESS
DESIGN



STANDARDISED
SOFTWARE



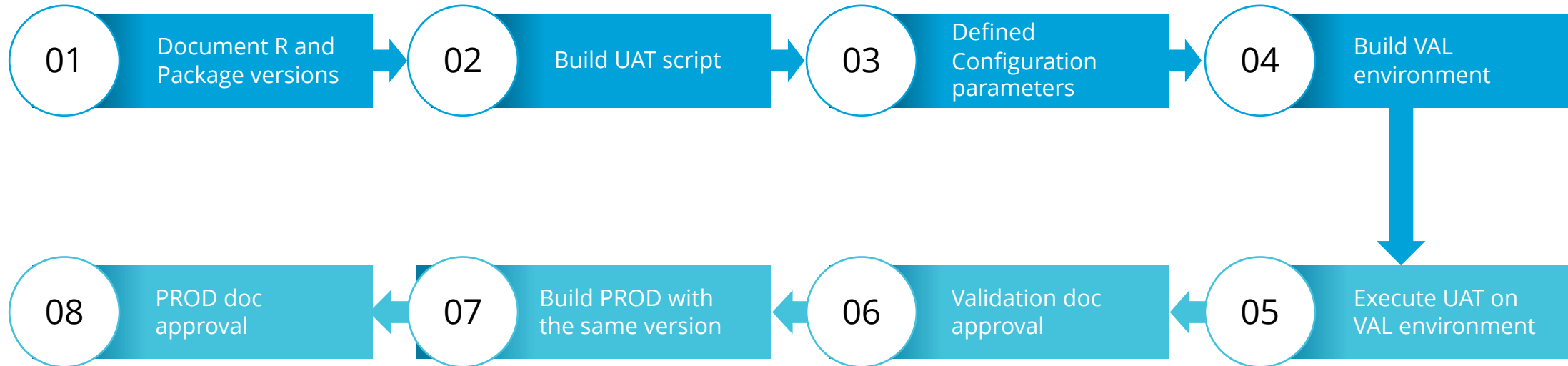
OPEN-SOURCE
SOFTWARE

CHALLENGES

- User Acceptance Testing
- Patch updates
- Internal development
- Pre-requisite
- Interdependencies
- Update frequency
- Backward compatibility
- Multiple Versions of R

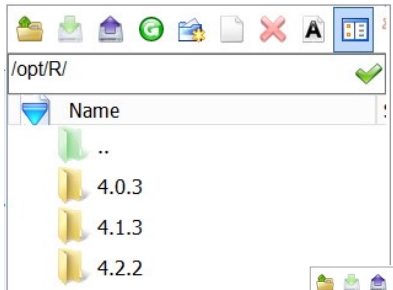


R PACKAGE PROCESS FLOW

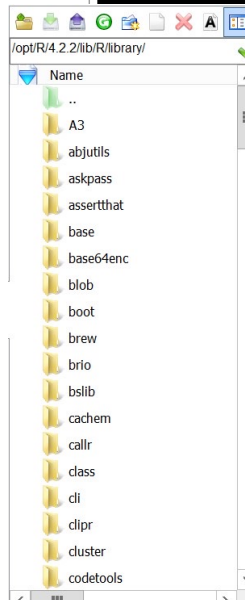


KEY CONFIGURATION EXAMPLES

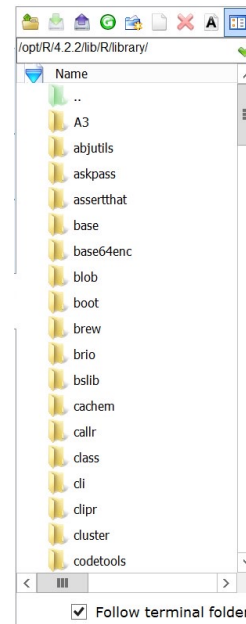
- Set up separate R Home location for multiple R versions
 - `/opt/R/<R_VERSION>`



```
[radmin@axderswb01 ~]$ cd /opt/R
[radmin@axderswb01 R]$ ll
total 0
drwxr-xr-x 5 root root 41 Jan 26 2023 4.0.3
drwxr-xr-x 5 root root 41 Jan 26 2023 4.1.3
drwxr-xr-x 5 root root 41 Jan 26 2023 4.2.2
[radmin@axderswb01 R]$
```



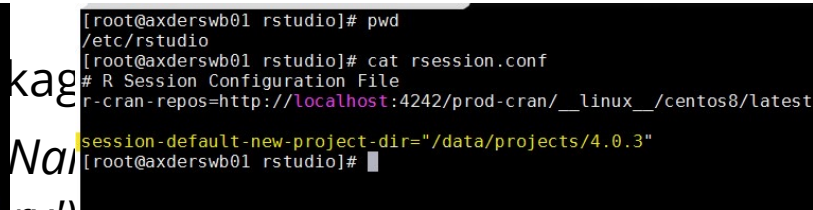
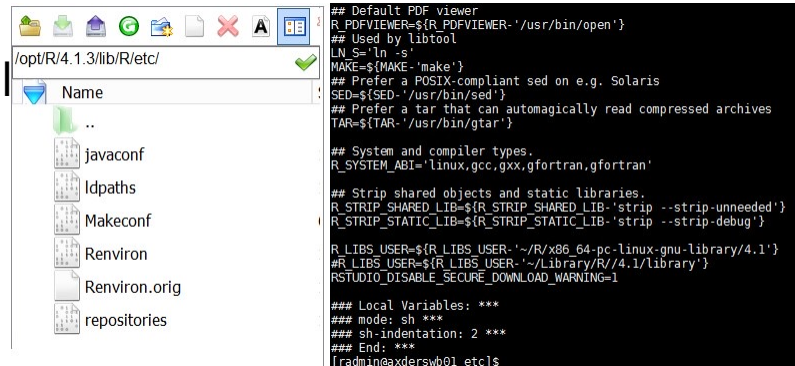
```
[radmin@axderswb01 library]$ pwd
/opt/R/4.2.2/lib/R/library
[radmin@axderswb01 library]$ ls -ltr | grep root
drwxrwxr-x 8 root radmingrp 122 Jan 26 2023 KernSmooth
drwxrwxr-x 10 root radmingrp 177 Jan 26 2023 MASS
drwxrwxr-x 12 root radmingrp 4096 Jan 26 2023 Matrix
drwxrwxr-x 7 root radmingrp 111 Jan 26 2023 base
drwxrwxr-x 8 root radmingrp 150 Jan 26 2023 boot
drwxrwxr-x 8 root radmingrp 150 Jan 26 2023 class
drwxrwxr-x 9 root radmingrp 185 Jan 26 2023 cluster
drwxrwxr-x 6 root radmingrp 100 Jan 26 2023 codetools
drwxrwxr-x 6 root radmingrp 100 Jan 26 2023 compiler
drwxrwxr-x 6 root radmingrp 103 Jan 26 2023 datasets
drwxrwxr-x 9 root radmingrp 153 Jan 26 2023 foreign
drwxrwxr-x 11 root radmingrp 157 Jan 26 2023 grDevices
drwxrwxr-x 8 root radmingrp 124 Jan 26 2023 graphics
drwxrwxr-x 8 root radmingrp 123 Jan 26 2023 grid
drwxrwxr-x 10 root radmingrp 174 Jan 26 2023 lattice
drwxrwxr-x 7 root radmingrp 112 Jan 26 2023 methods
drwxrwxr-x 9 root radmingrp 150 Jan 26 2023 mgcv
drwxrwxr-x 11 root radmingrp 179 Jan 26 2023 nlme
drwxrwxr-x 8 root radmingrp 150 Jan 26 2023 nnet
drwxrwxr-x 8 root radmingrp 123 Jan 26 2023 parallel
drwxrwxr-x 10 root radmingrp 160 Jan 26 2023 rpart
drwxrwxr-x 9 root radmingrp 180 Jan 26 2023 spatial
drwxrwxr-x 7 root radmingrp 112 Jan 26 2023 splines
drwxrwxr-x 9 root radmingrp 178 Jan 26 2023 stats
drwxrwxr-x 6 root radmingrp 100 Jan 26 2023 stats4
drwxrwxr-x 9 root radmingrp 184 Jan 26 2023 survival
drwxrwxr-x 9 root radmingrp 136 Jan 26 2023 tcltk
drwxrwxr-x 112 Jan 26 2023 tools
drwxrwxr-x 21 root radmingrp 4096 Jan 26 2023 translations
drwxrwxr-x 10 root radmingrp 166 Jan 26 2023 utils
drwxrwxr-x 7 radmin radmingrp 157 Feb 21 2023 rprojroot
[radmin@axderswb01 library]$
```



```
drwxrwxr-x 8 radmin radmingrp 154 Feb 21 2023 httpuv
drwxrwxr-x 8 radmin radmingrp 161 Feb 21 2023 fontawesome
drwxrwxr-x 13 radmin radmingrp 4096 Feb 21 2023 sass
drwxrwxr-x 7 radmin radmingrp 141 Feb 21 2023 jquerylib
drwxrwxr-x 7 radmin radmingrp 157 Feb 21 2023 pillar
drwxrwxr-x 8 radmin radmingrp 153 Feb 21 2023 purrr
drwxrwxr-x 6 radmin radmingrp 146 Feb 21 2023 downlit
drwxrwxr-x 7 radmin radmingrp 142 Feb 21 2023 ragg
drwxrwxr-x 9 radmin radmingrp 172 Feb 21 2023 stringr
drwxrwxr-x 6 radmin radmingrp 130 Feb 21 2023 pkgbuild
drwxrwxr-x 18 radmin radmingrp 4096 Feb 21 2023 bslib
drwxrwxr-x 8 radmin radmingrp 153 Feb 21 2023 tibble
drwxrwxr-x 7 radmin radmingrp 163 Feb 21 2023 usethis
drwxrwxr-x 6 radmin radmingrp 130 Feb 21 2023 rcmdcheck
drwxrwxr-x 8 radmin radmingrp 178 Feb 21 2023 roxygen2
drwxrwxr-x 6 radmin radmingrp 130 Feb 21 2023 rematch2
drwxrwxr-x 11 radmin radmingrp 4096 Feb 21 2023 shiny
drwxrwxr-x 10 radmin radmingrp 4096 Feb 21 2023 rmarkdown
drwxrwxr-x 9 radmin radmingrp 169 Feb 21 2023 htmlwidgets
drwxrwxr-x 6 radmin radmingrp 130 Feb 21 2023 waldo
drwxrwxr-x 7 radmin radmingrp 111 Feb 21 2023 miniUI
drwxrwxr-x 12 radmin radmingrp 4096 Feb 21 2023 pkgdown
drwxrwxr-x 9 radmin radmingrp 180 Feb 21 2023 profvis
drwxrwxr-x 11 radmin radmingrp 4096 Feb 21 2023 testthat
drwxrwxr-x 8 radmin radmingrp 172 Feb 21 2023 devtools
drwxrwxr-x 6 radmin radmingrp 4096 Feb 21 2023 brew
drwxrwxr-x 6 radmin radmingrp 131 Feb 21 2023 pbapply
drwxrwxr-x 7 radmin radmingrp 140 Feb 21 2023 A3
drwxrwxr-x 7 radmin radmingrp 141 Feb 21 2023 tidyselect
drwxrwxr-x 6 radmin radmingrp 130 Feb 21 2023 generics
drwxrwxr-x 9 radmin radmingrp 165 Feb 21 2023 dplyr
drwxrwxr-x 9 radmin radmingrp 165 Feb 21 2023 tidyr
drwxrwxr-x 7 radmin radmingrp 162 Feb 21 2023 abjutils
drwxrwxr-x 7 radmin radmingrp 126 Mar 21 2023 DBI
drwxrwxr-x 6 radmin radmingrp 130 Mar 21 2023 blob
drwxrwxr-x 6 radmin radmingrp 100 Mar 21 2023 assertthat
drwxrwxr-x 7 radmin radmingrp 141 Mar 21 2023 dbplyr
[radmin@axderswb01 library]$
```

KEY CONFIGURATION EXAMPLES

- Setup Project related R Package (non-core) library config
 - `/etc/rstudio/rsession.conf` and `/opt/R/<R_VERSION>/lib/R/etc/Renviron`
 - `session-default-new-project-dir="/project/location"`
 - `R_LIBS_USER=${R_LIBS_USER-'/<users_local_library_location>'}`



RECOMMENDATIONS



DOCUMENTATION
OF PROCESS
DESIGN



PRE-DEFINED
INSTALLATION
PATTERN



CONTROLLED
LIBRARY
OWNERSHIP



CONFIGURED R
PARAMETERS



CODE LIBRARY
AND PRIVATE
REPOSITORY

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Q&A

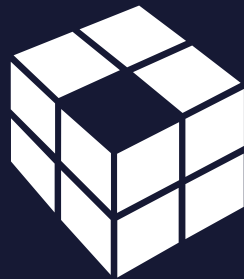
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THANK YOU

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