

R-hub

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Outline

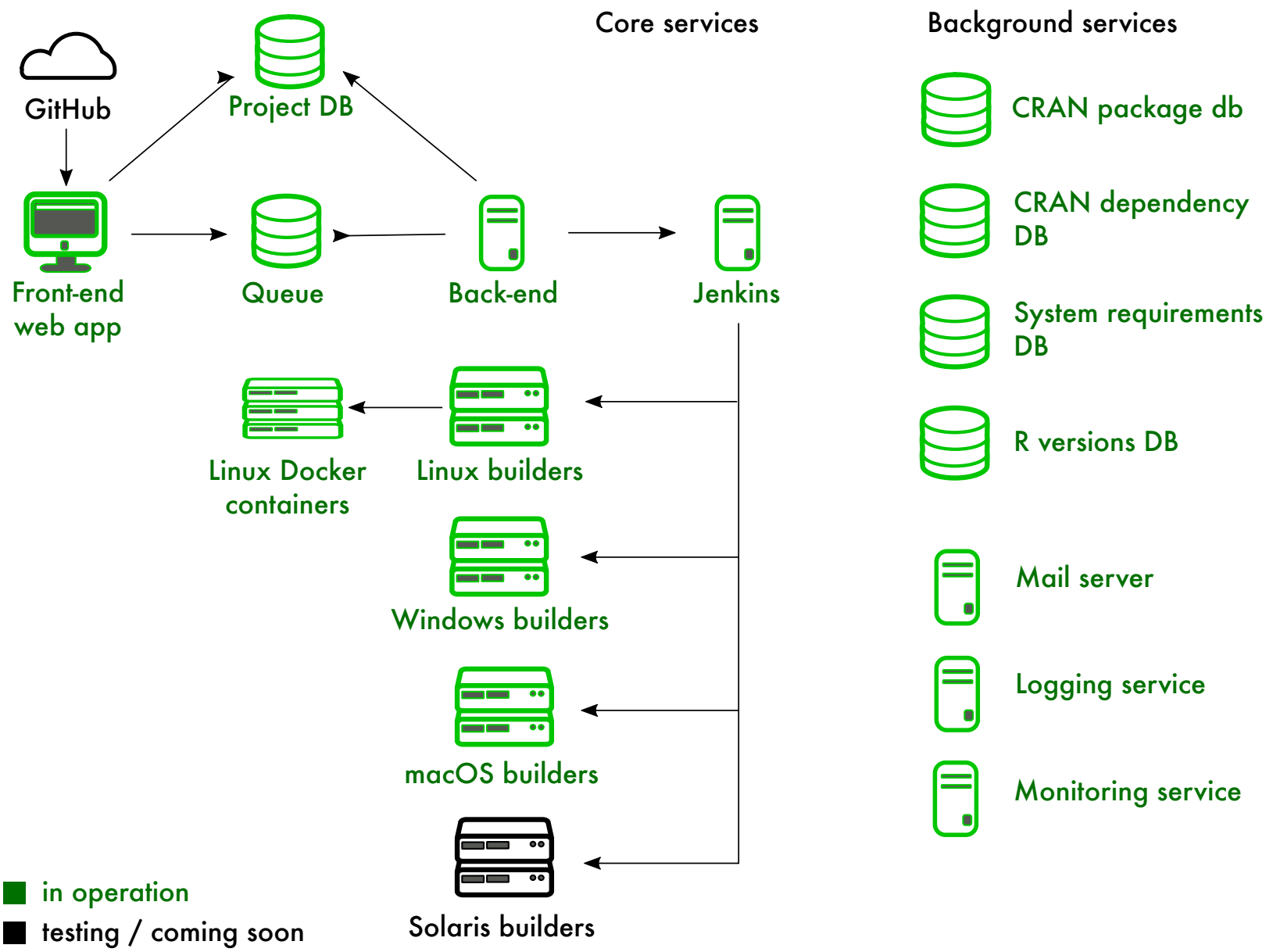
1. R CMD check as a service
 - Architecture
 - Demo
2. R packages
 - processx
 - revdepcheck

R CMD check as a service

Package build & check service

- ✓ Web submission
- ✓ API, R package client
- ⚙ CI via GitHub (in progress)
- ✓ Multi-platform: Linux, Windows, macOS
- ✓ Artifacts: binary packages

Architecture



Demo

R packages

processx

- Run and manage system processes in the background, automatic cleanup

```
pr <- process$new(...)  
pr$is_alive()  
pr$wait(timeout)  
pr$kill()  
pr$get_exit_status()
```

- `stdout` and `stderr` are connected to non-blocking connections

```
pr$read_output_lines()  
pr$read_error_lines()  
con <- pr$get_output_connection()  
readChar(con, ...)
```

processx synchronous wrapper: `run()`

- Timeout
- Line callbacks, chunk callbacks
- Spinner

```
run(command, args, ...)
```

```
run(command, args, spinner = TRUE, timeout = secs, ...)
```

```
run(command, args, stdout_line_callback = fun, ...)
```

```
run(command, args, stdout_callback = fun, ...)
```

processx polling

- Cross platform Unix-like `poll()`
- Polling a single process
- Polling multiple processes

```
pr$poll_io(timeout = 1000)  
poll(list(pr1, pr2, pr3), timeout = 1000)
```

processx event loops

```
# Initialise one task for each worker
for (i in seq_len(state$options$num_workers)) {
  task <- schedule_next_task(state)
  state <- do_task(state, task)
}

while (1) {
  state$progress_bar$tick()
  check_for_timeouts(state)
  if (are_we_done(state)) break;
  events <- poll(state)
  state <- handle_events(state, events)
  task <- schedule_next_task(state)
  state <- do_task(state, task)
  gc()
}
```

revdepcheck

- Automated, isolated, reverse dependency checking
- Compare previous release to release candidate
- Isolated package libraries
- Fast installation via `crancache`
- Time limits
- Nice UI: quick overview, progress bar with ETA

~/works/r-hub/p... #1 2017-07-03-brussel... #2 2017-07-03-bru... #3

✓ networkTomography 0.3	—	E: 0	W: 0	N: 1
✓ networktools 1.0.0	—	E: 0	W: 0	N: 1
✓ NFP 0.99.2	—	E: 0	W: 0	N: 2
✗ nimble 0.6-5	—	E: 0 +1	W: 0	N: 1
✓ nlnet 1.0	—	E: 0	W: 0	N: 0
✓ OpasnetUtils 1.3	—	E: 1	W: 0	N: 0
✓ optbdmaeAT 1.0.1	—	E: 1	W: 0	N: 0
✓ optrcdmaeAT 1.0.0	—	E: 1	W: 0	N: 0
✓ optrees 1.0	—	E: 0	W: 0	N: 1
✓ osmar 1.1-7	—	E: 0	W: 0	N: 3
✓ outbreaker 1.1-7	—	E: 0	W: 1	N: 0
✓ OutrankingTools 1.0	—	E: 0	W: 0	N: 1
✓ PAC 1.0.8	—	E: 0	W: 0	N: 0
✓ PAFit 1.0.0.1	—	E: 0	W: 0	N: 0
✓ PABI 1.0	—	E: 1	W: 0	N: 2
✓ paramlink 1.1-0	—	E: 0	W: 0	N: 0
✓ pathClass 0.9.4	—	E: 0	W: 0	N: 3
✗ pcalg 2.4-5	—	E: 0 -1+1	W: 0	N: 2
✓ pencopulaCond 0.2	—	E: 0	W: 0	N: 0
✓ penRvine 0.2	—	E: 0	W: 0	N: 0
✓ phangorn 2.2.0	—	E: 1	W: 0	N: 0
✓ phylopath 0.2.3	—	E: 0	W: 0	N: 0

More R packages

<code>r-hub/builddeps</code>	Find build-time package dependencies
<code>r-lib/callr</code>	Call R from R
<code>r-lib/crancache</code>	Transparent caching of R packages
<code>metacran/crandb</code>	CRAN package database with API
<code>r-hub/crandeps</code>	Query CRAN package dependencies
<code>r-hub/cranlike</code>	Manage CRAN-like repositories
<code>metacran/cranlogs</code>	CRAN package downloads API
<code>gaborcsardi/debugme</code>	Easy and efficient debug logs for R packages
<code>r-lib/desc</code>	Manipulate DESCRIPTION files
<code>r-hub/localbuilder</code>	Build R packages in Docker containers
<code>gaborcsardi/pingr</code>	ICMP and HTTP ping
<code>r-lib/processx</code>	Execute and control system processes
<code>r-lib/rcmdcheck</code>	Capture and compare R CMD check results
<code>r-lib/remotes</code>	Install packages from anywhere
<code>r-lib/revdepcheck</code>	Automated, isolated reverse dependency checking
<code>r-hub/rhub</code>	Run R-hub checks from R
<code>metacran/rversions</code>	R versions and release dates
<code>gaborcsardi/secret</code>	Secure sharing of sensitive information in R packages
<code>metacran/seer</code>	Search CRAN packages
<code>r-lib/sessioninfo</code>	A better <code>sessionInfo()</code>
<code>gaborcsardi/statusbar</code>	Good looking terminal status bar
<code>r-hub/sysreqs</code>	Resolve system requirements

Ongoing work

- Make everyting work better
- CI via GitHub
- Solaris
- Easy (well, easier) deployment

Links

- <https://builder.r-hub.io>
- <https://github.com/r-hub/rhub>
- <https://github.com/r-lib/processx>
- <https://github.com/r-lib/revdepcheck>

