

Package ‘Rcollectl’

March 4, 2025

Title Help use collectl with R in Linux, to measure resource consumption in R processes

Version 1.6.0

Date 2023-03-08

Description Provide functions to obtain instrumentation data on processes in a unix environment. Parse output of a collectl run. Vizualize aspects of system usage over time, with annotation.

Imports utils, ggplot2, lubridate, processx

License Artistic-2.0

URL <https://github.com/vjcitn/Rcollectl>

BugReports <https://support.bioconductor.org/t/Rcollectl>

biocViews Software, Infrastructure

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

SystemRequirements collectl

Suggests knitr, BiocStyle, knitcitations, sessioninfo, rmarkdown, testthat, covr

VignetteBuilder knitr

git_url <https://git.bioconductor.org/packages/Rcollectl>

git_branch RELEASE_3_20

git_last_commit 75a1d4c

git_last_commit_date 2024-10-29

Repository Bioconductor 3.20

Date/Publication 2025-03-03

Author Vincent Carey [aut, cre] (<<https://orcid.org/0000-0003-4046-0063>>), Yubo Cheng [aut]

Maintainer Vincent Carey <stvjc@channing.harvard.edu>

Contents

browse_units	2
cl_exists	2
cl_parse	3
cl_result_path	4
cl_start	4
cl_stop	5
cl_timestamp	5
plot_usage	6
print.Rcollectl_process	7

Index	8
--------------	----------

browse_units	<i>browse a page defining units of collectl reporting</i>
--------------	---

Description

browse a page defining units of collectl reporting

Usage

```
browse_units(...)
```

Arguments

... passed to [browseURL](#)

Value

side effect is running browseURL

Examples

```
if (interactive()) {
  browse_units()
}
```

cl_exists	<i>check for collectl availability</i>
-----------	--

Description

check for collectl availability

Usage

```
cl_exists()
```

Value

logical(1)

Examples

```
cl_exists()
```

cl_parse	<i>parse a collectl output – could be conditional on discovered call</i>
----------	--

Description

parse a collectl output – could be conditional on discovered call

Usage

```
cl_parse(path, tz = "EST", rescale_mem = TRUE)
```

Arguments

path	character(1) path to (possibly gzipped) collectl output
tz	character(1) POSIXct time zone code, defaults to "EST"
rescale_mem	logical(1) if TRUE, divide reported MEM_Used by 1000

Value

a data.frame

Note

A lubridate datetime is added as a column. The test file `demo_1123.tab.gz` is a collectl-generated report for a session ranging over 10 minutes, analyzing RNA-seq data on a multicore machine.

Examples

```
lk = cl_parse(system.file("demotab/demo_1123.tab.gz", package="Rcollectl"))
head(lk)
```

cl_result_path	<i>get full path to collectl report</i>
----------------	---

Description

get full path to collectl report

Usage

```
cl_result_path(proc)
```

Arguments

proc an entity inheriting from "Rcollectl_process" S3 class

Value

character(1) path to report

Examples

```
example(cl_start)
```

cl_start	<i>start collectl if possible</i>
----------	-----------------------------------

Description

start collectl if possible

Usage

```
cl_start(target = tempfile())
```

Arguments

target character(1) path; destination of collectl report

Value

instance of Rcollectl_process with components process (a processx R6 instance) and target (a file path where collectl results will be written)

Examples

```
if (cl_exists()) {  
  zz = cl_start()  
  Sys.sleep(2)  
  print(zz)  
  Sys.sleep(2)  
  print(cl_result_path(zz))  
  cl_stop(zz)  
  Sys.sleep(2)  
  zz$process$is_alive()  
}
```

cl_stop	<i>stop collectl via processx interrupt</i>
---------	---

Description

stop collectl via processx interrupt

Usage

```
cl_stop(proc)
```

Arguments

proc an entity inheriting from "Rcollectl_process" S3 class

Value

invisibly returns the input

Examples

```
example(cl_start)
```

cl_timestamp	<i>Functions to add time stamps to collectl output</i>
--------------	--

Description

Functions to add time stamps to collectl output

Usage

```
cl_timestamp(proc, step)
```

```
cl_timestamp_layer(arg)
```

```
cl_timestamp_label(arg, tz = "EST")
```

Arguments

proc	an entity inheriting from "Rcollectl_process" S3 class
step	character(1) name of step within a workflow
arg	proc (an entity inheriting from "Rcollectl_process" S3 class) or path to collectl output
tz	character(1) time zone code

Value

cl_timestamp() returns a tab delimited text file

cl_timestamp_layer() and cl_timestamp_label() return objects that can be combined with ggplot.

Examples

```
id <- cl_start()
Sys.sleep(2)
cl_timestamp(id, "step1")
Sys.sleep(2)
Sys.sleep(2)
cl_timestamp(id, "step2")
Sys.sleep(2)
Sys.sleep(2)
cl_timestamp(id, "step3")
Sys.sleep(2)
cl_stop(id)
path <- cl_result_path(id)
plot_usage(cl_parse(path)) +
  cl_timestamp_layer(path) +
  cl_timestamp_label(path) +
  ggplot2::theme(axis.text.x = ggplot2::element_text(angle = 90, vjust = 0.5, hjust=1))
```

plot_usage

elementary display of usage data from collectl

Description

elementary display of usage data from collectl

Usage

```
plot_usage(x)
```

Arguments

x	output of cl_parse
---	--------------------

Value

ggplot with geom_point and facet_grid

Examples

```
lk = cl_parse(system.file("demotab/demo_1123.tab.gz", package="Rcollectl"))
plot_usage(lk)
```

`print.Rcollectl_process`

print method for Rcollectl process

Description

print method for Rcollectl process

Usage

```
## S3 method for class 'Rcollectl_process'
print(x, ...)
```

Arguments

<code>x</code>	an entity inheriting from "Rcollectl_process" S3 class
<code>...</code>	not used

Value

invisibly returns the input

Examples

```
example(cl_start)
```

Index

`browse_units`, 2
`browseURL`, 2

`cl_exists`, 2
`cl_parse`, 3
`cl_result_path`, 4
`cl_start`, 4
`cl_stop`, 5
`cl_timestamp`, 5
`cl_timestamp_label (cl_timestamp)`, 5
`cl_timestamp_layer (cl_timestamp)`, 5

`plot_usage`, 6
`print.Rcollectl_process`, 7