

Package ‘Rcollectl’

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

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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 7.2.3

SystemRequirements collectl

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

VignetteBuilder knitr

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| | |
|--------------|---|
| 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")
```

Arguments

| | |
|------|---|
| path | character(1) path to (possibly gzipped) collectl output |
| tz | character(1) POSIXct time zone code, defaults to "EST" |

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

x an entity inheriting from "Rcollectl_process" S3 class
... not used

Value

invisibly returns the input

Examples

```
example(cl_start)
```

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