Package ‘ratelimitr’

October 14, 2022

Type Package
Title Rate Limiting for R
Version 0.4.1
Author Tarak Shah
Maintainer Tarak Shah <tarak.shah@gmail.com>
Description Allows to limit the rate at which one or more functions can be called.
License MIT + file LICENSE
LazyData TRUE
RoxygenNote 6.1.0
Suggests testthat, microbenchmark, knitr, rmarkdown, covr
Imports assertthat
VignetteBuilder knitr
URL https://github.com/tarakc02/ratelimitr
BugReports https://github.com/tarakc02/ratelimitr/issues
NeedsCompilation no
Repository CRAN
Date/Publication 2018-10-07 21:00:06 UTC

R topics documented:

get_function .................................................. 2
get_precision .................................................. 2
get_rates ...................................................... 2
limit_rate ...................................................... 3
rate ............................................................ 4
reset ........................................................... 4
UPDATE_RATE ................................................. 5

Index 6


---

### get_function

**Description**
Access the original function from a rate limited function

**Usage**

```python
get_function(f)
```

**Arguments**

- `f` A rate limited function or group of functions

---

### get_precision

**Description**
Access the rate limit precision

**Usage**

```python
get_precision(f)
```

**Arguments**

- `f` A rate limited function or group of functions

---

### get_rates

**Description**
Access the rate limit(s) of a rate limited function

**Usage**

```python
get_rates(f)
```

**Arguments**

- `f` A rate limited function or group of functions
Limit the rate at which a function will execute

Description

Limit the rate at which a function will execute

Usage

```r
limit_rate(f, ..., precision = 60)
```

## S3 method for class 'list'
```r
limit_rate(f, ..., precision = 60)
```

## S3 method for class 'function_list'
```r
limit_rate(f, ..., precision = 60)
```

## S3 method for class 'function'
```r
limit_rate(f, ..., precision = 60)
```

Arguments

- `f` A single function to be rate-limited, or a named list of functions
- `...` One or more rates, created using `rate`
- `precision` The precision with which time intervals can be measured, in hertz

Value

If `f` is a single function, then a new function with the same signature and (eventual) behavior as the original function, but rate limited. If `f` is a named list of functions, then a new list of functions with the same names and signatures, but collectively bound by a shared rate limit.

See Also

- `rate`, `UPDATE_RATE`

Examples

```r
## limiting a single function
f <- limit_rate(Sys.time, rate(n = 5, period = .1))
res <- replicate(10, f())
## show the elapsed time between each function call:
round(res[-1] - head(res, -1), 3)

## for multiple functions, make sure the list is named:
f <- function() 1
g <- function() 2
limited <- limit_rate(list(f = f, g = g), rate(n = 1, period = .1))
```
system.time({limited$f(); limited$g()})

rate Create a new rate

Description
Create a new rate

Usage
rate(n, period)

Arguments

n Number of allowed events within a period
period Length (in seconds) of measurement period

See Also
limit_rate

Examples

## a function
f <- function() NULL

## limit f to 10 calls per second
limited_f <- limit_rate(f, rate(n = 10, period = 1))

reset Re-create a rate-limited function

Description
This function does not modify the original rate-limited function, instead it returns a new function with the same rate limits (but no memory of prior function calls).

Usage
reset(f)

Arguments

f A rate-limited function or group of functions
Examples

```r
f <- function() NULL
f_lim <- limit_rate(f, rate(n = 1, period = .1))
f_lim() ## the next call to f_lim will trigger the rate limit

f_lim2 <- reset(f_lim) ## but f_lim2 has a fresh start
## f_lim2 behaves as though no calls have been made
system.time(f_lim2())
## while f_lim is still constrained
system.time(f_lim())
```

Description

`UPDATE_RATE` modifies an existing rate-limited function in place, changing the rate limits without otherwise altering the function’s behavior. When a rate limited function has its rate limits updated, the previous rate limits and any calls that would have counted against those rate limits are immediately forgotten, and only the new rate limits are obeyed going forward.

Usage

```r
UPDATE_RATE(lf, ..., precision = 60)
```

Arguments

- `lf`: A rate-limited function or group of functions
- `...`: One or more rates, created using `rate`
- `precision`: The precision with which time intervals can be measured, in hertz

Examples

```r
f <- function() NULL
f_lim <- limit_rate(f, rate(n = 1, period = .1))

# update the rate limits to 2 calls per .1 second
UPDATE_RATE(f_lim, rate(n = 2, period = .1))
```
Index

get_function, 2
get_precision, 2
get_rates, 2

limit_rate, 3, 4

rate, 3, 4, 5
reset, 4

UPDATE_RATE, 3, 5