

Package ‘webmockr’

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Title Stubbing and Setting Expectations on 'HTTP' Requests

Description Stubbing and setting expectations on 'HTTP' requests. Includes tools for stubbing 'HTTP' requests, including expected request conditions and response conditions. Match on 'HTTP' method, query parameters, request body, headers and more. Can be used for unit tests or outside of a testing context.

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Contents

build_crul_request	3
build_crul_response	3
build_httr2_request	4
build_httr2_response	4
build_httr_request	5
build_httr_response	6
CrulAdapter	6
enable	10
HashCounter	11
HttpLibAdapaterRegistry	12
httr2_mock	13
httr_mock	13
including	14
last_request	15
last_stub	16
mocking-disk-writing	16
mock_file	19
pluck_body	19
remove_request_stub	20
RequestPattern	21
RequestRegistry	24
RequestSignature	26
request_registry	28
Response	29
StubbedRequest	33
StubCounter	38
StubRegistry	39
stub_body_diff	41
stub_registry	43
stub_registry_clear	44
stub_request	44
to_raise	49
to_return	50
to_timeout	51
webmockr-defunct	52
webmockr_configure	52
webmockr_reset	54
wi_th	55

`build_crul_request` *Build a crul request*

Description

Build a crul request

Usage

`build_crul_request(x)`

Arguments

`x` an unexecuted crul request object

Value

a crul request

`build_crul_response` *Build a crul response*

Description

Build a crul response

Usage

`build_crul_response(req, resp)`

Arguments

`req` a request
`resp` a response

Value

a crul response

build_httr2_request *Build an httr2 request*

Description

Build an httr2 request

Usage

```
build_httr2_request(x)
```

Arguments

x an unexecuted httr2 request object

Value

a httr2_request

build_httr2_response *Build a httr2 response (httr2_response)*

Description

Build a httr2 response (httr2_response)

Usage

```
build_httr2_response(req, resp)
```

Arguments

req a request
resp a response

Value

an httr2 response (httr2_response)

Examples

```
## Not run:
# x <- Httr2Adapter$new()
# library(httr2)
# req <- request("https://r-project.org")
# req = req %>% req_body_json(list(x = 1, y = 2))
# #req$method <- 'POST'
# stub_request("post", "https://r-project.org") %>%
#   to_return(status = 418, body = list(a = 5))
# stub = webmockr_stub_registry$request_stubs[[1]]
# stub$counter$.__enclos_env__$private$total <- 1
# resp = x$.__enclos_env__$private$build_stub_response(stub)
# resp = x$.__enclos_env__$private$build_response(req, resp)
# resp = x$.__enclos_env__$private$add_response_sequences(stub, resp)
# out
# out$body
# out$content

## End(Not run)
```

build_httr_request *Build a httr request*

Description

Build a httr request

Usage

```
build_httr_request(x)
```

Arguments

x an unexecuted httr request object

Value

a httr request

build_htr_response *Build a htr response*

Description

Build a htr response

Usage

```
build_htr_response(req, resp)
```

Arguments

req	a request
resp	a response

Value

a htr response

CruLAdapter *Adapters for Modifying HTTP Requests*

Description

Adapter is the base parent class used to implement **webmockr** support for different HTTP clients. It should not be used directly. Instead, use one of the client-specific adapters that webmockr currently provides:

- CruLAdapter for **crul**
- HtrAdapter for **htr**
- Htr2Adapter for **htr2**

Details

Note that the documented fields and methods are the same across all client-specific adapters.

Super class

`webmockr::Adapter` -> CruLAdapter

Public fields

client HTTP client package name
 name adapter name

Methods

Public methods:

- [CruAdapter\\$clone\(\)](#)

Method clone(): The objects of this class are cloneable with this method.

Usage:

CruAdapter\$clone(deep = FALSE)

Arguments:

deep Whether to make a deep clone.

Super class

[webmockr::Adapter](#) -> [HttpAdapter](#)

Public fields

client HTTP client package name

name adapter name

Methods

Public methods:

- [HttpAdapter\\$clone\(\)](#)

Method clone(): The objects of this class are cloneable with this method.

Usage:

HttpAdapter\$clone(deep = FALSE)

Arguments:

deep Whether to make a deep clone.

Super class

[webmockr::Adapter](#) -> [Http2Adapter](#)

Public fields

client HTTP client package name

name adapter name

Methods

Public methods:

- [Http2Adapter\\$clone\(\)](#)

Method clone(): The objects of this class are cloneable with this method.

Usage:

Http2Adapter\$clone(deep = FALSE)

Arguments:

deep Whether to make a deep clone.

Public fields

client HTTP client package name

name adapter name

Methods

Public methods:

- [Adapter\\$new\(\)](#)
- [Adapter\\$enable\(\)](#)
- [Adapter\\$disable\(\)](#)
- [Adapter\\$handle_request\(\)](#)
- [Adapter\\$remove_stubs\(\)](#)
- [Adapter\\$clone\(\)](#)

Method new(): Create a new Adapter object

Usage:

Adapter\$new()

Method enable(): Enable the adapter

Usage:

Adapter\$enable(quiet = FALSE)

Arguments:

quiet (logical) suppress messages? default: FALSE

Returns: TRUE, invisibly

Method disable(): Disable the adapter

Usage:

Adapter\$disable(quiet = FALSE)

Arguments:

quiet (logical) suppress messages? default: FALSE

Returns: FALSE, invisibly

Method handle_request(): All logic for handling a request

Usage:

Adapter\$handle_request(req)

Arguments:

req a request

Returns: various outcomes

Method `remove_stubs()`: Remove all stubs

Usage:

```
Adapter$remove_stubs()
```

Returns: nothing returned; removes all request stubs

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
Adapter$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

Examples

```
## Not run:
if (requireNamespace("httr", quietly = TRUE)) {
  # library(httr)

  # normal httr request, works fine
  # real <- GET("https://httpbin.org/get")
  # real

  # with webmockr
  # library(webmockr)
  ## turn on httr mocking
  # httr_mock()
  ## now this request isn't allowed
  # GET("https://httpbin.org/get")
  ## stub the request
  # stub_request('get', uri = 'https://httpbin.org/get') %>%
  #   with(
  #     headers = list(
  #       'Accept' = 'application/json, text/xml, application/xml, */*'
  #     )
  #   ) %>%
  #   to_return(status = 418, body = "I'm a teapot!", headers = list(a = 5))
  ## now the request succeeds and returns a mocked response
  # (res <- GET("https://httpbin.org/get"))
  # res$status_code
  # rawToChar(res$content)

  # allow real requests while webmockr is loaded
  # webmockr_allow_net_connect()
  # webmockr_net_connect_allowed()
  # GET("https://httpbin.org/get?animal=chicken")
  # webmockr_disable_net_connect()
  # webmockr_net_connect_allowed()
  # GET("https://httpbin.org/get?animal=chicken")

  # httr_mock(FALSE)
}
```

```
## End(Not run)
```

enable	<i>Enable or disable webmockr</i>
--------	-----------------------------------

Description

Enable or disable webmockr

Usage

```
enable(adapter = NULL, options = list(), quiet = FALSE)
```

```
enabled(adapter = "crul")
```

```
disable(adapter = NULL, options = list(), quiet = FALSE)
```

Arguments

adapter	(character) the adapter name, 'crul', 'httr', or 'httr2'. one or the other. if none given, we attempt to enable both adapters
options	list of options - ignored for now.
quiet	(logical) suppress messages? default: FALSE

Details

- `enable()` enables **webmockr** for all adapters
- `disable()` disables **webmockr** for all adapters
- `enabled()` answers whether **webmockr** is enabled for a given adapter

Value

`enable()` and `disable()` invisibly returns booleans for each adapter, as a result of running `enable` or `disable`, respectively, on each [HttpLibAdapaterRegistry](#) object. `enabled` returns a single boolean

HashCounter

HashCounter

Description

hash with counter, to store requests, and count each time it is used

Public fields

hash (list) a list for internal use only, with elements key, sig, and count

Methods

Public methods:

- [HashCounter\\$put\(\)](#)
- [HashCounter\\$get\(\)](#)
- [HashCounter\\$clone\(\)](#)

Method `put()`: Register a request by it's key

Usage:

```
HashCounter$put(req_sig)
```

Arguments:

req_sig an object of class RequestSignature

Returns: nothing returned; registers request and iterates internal counter

Method `get()`: Get a request by key

Usage:

```
HashCounter$get(req_sig)
```

Arguments:

req_sig an object of class RequestSignature

Returns: (integer) the count of how many times the request has been made

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
HashCounter$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

See Also

Other request-registry: [RequestRegistry](#), [request_registry\(\)](#)

Examples

```
x <- HashCounter$new()
x$hash
z <- RequestSignature$new(method = "get", uri = "https://httpbin.org/get")
x$put(z)
x$hash
x$get(z)
x$put(z)
x$get(z)
```

HttpLibAdapaterRegistry

HttpLibAdapaterRegistry

Description

http lib adapter registry

Public fields

adapters list

Methods

Public methods:

- [HttpLibAdapaterRegistry#print\(\)](#)
- [HttpLibAdapaterRegistry\\$register\(\)](#)
- [HttpLibAdapaterRegistry\\$clone\(\)](#)

Method `print()`: print method for the HttpLibAdapaterRegistry class

Usage:

```
HttpLibAdapaterRegistry#print(x, ...)
```

Arguments:

x self

... ignored

Method `register()`: Register an http library adapter

Usage:

```
HttpLibAdapaterRegistry$register(x)
```

Arguments:

x an http lib adapter, e.g., [CurlAdapter](#)

Returns: nothing, registers the library adapter

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
HttpLibAdapaterRegistry$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

Examples

```
x <- HttpLibAdapaterRegistry$new()
x$register(CrulAdapter$new())
x
x$adapters
x$adapters[[1]]$name
```

httr2_mock	<i>Turn on httr2 mocking</i>
------------	------------------------------

Description

Sets a callback that routes httr2 requests through webmockr

Usage

```
httr2_mock(on = TRUE)
```

Arguments

on (logical) TRUE to turn on, FALSE to turn off. default: TRUE

Value

Silently returns TRUE when enabled and FALSE when disabled.

httr_mock	<i>Turn on httr mocking</i>
-----------	-----------------------------

Description

Sets a callback that routes httr requests through webmockr

Usage

```
httr_mock(on = TRUE)
```

Arguments

on (logical) set to TRUE to turn on, and FALSE to turn off. default: TRUE

Value

Silently returns TRUE when enabled and FALSE when disabled.

including	<i>Partially match request query parameters or request bodies</i>
-----------	---

Description

For use inside `wi_th()`

Usage

```
including(x)
```

```
excluding(x)
```

Arguments

`x` (list) a list; may support other classes in the future

Value

same as `x`, but with two attributes added:

- `partial_match`: always TRUE
- `partial_type`: the type of match, one of include or exclude

Headers

Matching on headers already handles partial matching. That is, `wi_th(headers = list(Fruit = "pear"))` matches any request that has any request header that matches - the request can have other request headers, but those don't matter as long as there is a match. These helpers (`including/excluding`) are needed for query parameters and bodies because by default matching must be exact for those.

Examples

```
including(list(foo = "bar"))
excluding(list(foo = "bar"))

# get just keys by setting values as NULL
including(list(foo = NULL, bar = NULL))

# in a stub
req <- stub_request("get", "https://httpbin.org/get")
req

## query
wi_th(req, query = list(foo = "bar"))
wi_th(req, query = including(list(foo = "bar")))
wi_th(req, query = excluding(list(foo = "bar")))

## body
```

```
with(req, body = list(foo = "bar"))
with(req, body = including(list(foo = "bar")))
with(req, body = excluding(list(foo = "bar")))

# cleanup
stub_registry_clear()
```

last_request	<i>Get the last HTTP request made</i>
--------------	---------------------------------------

Description

Get the last HTTP request made

Usage

```
last_request()
```

Value

NULL if no requests registered; otherwise the last registered request made as a RequestSignature class

Examples

```
# no requests
request_registry_clear()
last_request()

# a request is found
enable()
stub_request("head", "https://nytimes.com")
library(crul)
crul::ok("https://nytimes.com")
last_request()

# cleanup
request_registry_clear()
stub_registry_clear()
```

last_stub *Get the last stub created*

Description

Get the last stub created

Usage

```
last_stub()
```

Value

NULL if no stubs found; otherwise the last stub created as a StubbedRequest class

Examples

```
# no requests
stub_registry_clear()
last_stub()

# a stub is found
stub_request("head", "https://nytimes.com")
last_stub()

stub_request("post", "https://nytimes.com/stories")
last_stub()

# cleanup
stub_registry_clear()
```

mocking-disk-writing *Mocking writing to disk*

Description

Mocking writing to disk

Examples

```
## Not run:
# enable mocking
enable()
# getOption('httr2_mock')

# Write to a file before mocked request
```



```
# crul
library(crul)
## make a temp file
f <- tempfile(fileext = ".json")
## write something to the file
cat("{\"hello\":\"world\"}\n", file = f)
readLines(f)
## make the stub
stub_request("get", "https://httpbin.org/get") %>%
  to_return(body = file(f))
## make a request
(out <- HttpClient$new("https://httpbin.org/get")$get(disk = f))
out$content
readLines(out$content)

# httr
library(httr)
## make a temp file
f <- tempfile(fileext = ".json")
## write something to the file
cat("{\"hello\":\"world\"}\n", file = f)
readLines(f)
## make the stub
stub_request("get", "https://httpbin.org/get") %>%
  to_return(
    body = file(f),
    headers = list("content-type" = "application/json")
  )
## make a request
## with httr, you must set overwrite=TRUE or you'll get an error
out <- GET("https://httpbin.org/get", write_disk(f, overwrite = TRUE))
out
out$content
content(out, "text", encoding = "UTF-8")

# httr2
library(httr2)
## make a temp file
f <- tempfile(fileext = ".json")
## write something to the file
cat("{\"hello\":\"world\"}\n", file = f)
readLines(f)
## make the stub
stub_request("get", "https://httpbin.org/get") %>%
  to_return(
    body = file(f),
    headers = list("content-type" = "application/json")
  )
## make a request
req <- request("https://httpbin.org/get")
out <- req_perform(req, path = f)
out
```

```

out$body
out
out$headers
readLines(out$body)

# Use mock_file to have webmockr handle file and contents

# crul
library(crul)
f <- tempfile(fileext = ".json")
## make the stub
stub_request("get", "https://httpbin.org/get") %>%
  to_return(body = mock_file(f, "{\\"hello\\":\\"mars\\"}\n"))
## make a request
(out <- crul::HttpClient$new("https://httpbin.org/get")$get(disk = f))
out$content
readLines(out$content)

# httr
library(httr)
## make a temp file
f <- tempfile(fileext = ".json")
## make the stub
stub_request("get", "https://httpbin.org/get") %>%
  to_return(
    body = mock_file(path = f, payload = "{\\"foo\\": \\"bar\\"}"),
    headers = list("content-type" = "application/json")
  )
## make a request
out <- GET("https://httpbin.org/get", write_disk(f))
out
## view stubbed file content
out$content
readLines(out$content)
content(out, "text", encoding = "UTF-8")

# httr2
library(httr2)
## make a temp file
f <- tempfile(fileext = ".json")
## make the stub
stub_request("get", "https://httpbin.org/get") %>%
  to_return(
    body = mock_file(path = f, payload = "{\\"foo\\": \\"bar\\"}"),
    headers = list("content-type" = "application/json")
  )
## make a request
req <- request("https://httpbin.org/get")
out <- req_perform(req, path = f)
out
## view stubbed file content
out$body

```

```

readLines(out$body)

# disable mocking
disable()

## End(Not run)

```

mock_file	<i>Mock file</i>
-----------	------------------

Description

Mock file

Usage

```
mock_file(path, payload)
```

Arguments

path (character) a file path. required
 payload (character) string to be written to the file given at path parameter. required

Value

a list with S3 class mock_file

Examples

```
mock_file(path = tempfile(), payload = "{\"foo\": \"bar\"}")
```

pluck_body	<i>Extract the body from an HTTP request</i>
------------	--

Description

Returns an appropriate representation of the data contained within a request body based on its encoding.

Usage

```
pluck_body(x)
```

Arguments

x an unexecuted crul, httr or httr2 request object

Value

one of the following:

- NULL if the request is not associated with a body
- NULL if an upload is used not in a list
- list containing the multipart-encoded body
- character vector with the JSON- or raw-encoded body, or upload form file

remove_request_stub	<i>Remove a request stub</i>
---------------------	------------------------------

Description

Remove a request stub

Usage

```
remove_request_stub(stub)
```

Arguments

stub a request stub, of class `StubbedRequest`

Value

logical, TRUE if removed, FALSE if not removed

See Also

Other stub-registry: [StubRegistry](#), [stub_registry\(\)](#), [stub_registry_clear\(\)](#)

Examples

```
(x <- stub_request("get", "https://httpbin.org/get"))
stub_registry()
remove_request_stub(x)
stub_registry()
```

RequestPattern	<i>RequestPattern class</i>
----------------	-----------------------------

Description

class handling all request matchers

Public fields

method_pattern xxx

uri_pattern xxx

body_pattern xxx

headers_pattern xxx

Methods

Public methods:

- [RequestPattern\\$new\(\)](#)
- [RequestPattern\\$matches\(\)](#)
- [RequestPattern\\$to_s\(\)](#)
- [RequestPattern\\$clone\(\)](#)

Method `new()`: Create a new RequestPattern object

Usage:

```
RequestPattern$new(  
  method,  
  uri = NULL,  
  uri_regex = NULL,  
  query = NULL,  
  body = NULL,  
  headers = NULL,  
  basic_auth = NULL  
)
```

Arguments:

`method` the HTTP method (any, head, options, get, post, put, patch, trace, or delete). "any" matches any HTTP method. required.

`uri` (character) request URI. required or `uri_regex`

`uri_regex` (character) request URI as regex. required or `uri`

`query` (list) query parameters, optional

`body` (list) body request, optional

`headers` (list) headers, optional

`basic_auth` (list) vector of length 2 (username, password), optional

Returns: A new RequestPattern object

Method `matches()`: does a request signature match the selected matchers?

Usage:

```
RequestPattern$matches(request_signature)
```

Arguments:

`request_signature` a [RequestSignature](#) object

Returns: a boolean

Method `to_s()`: Print pattern for easy human consumption

Usage:

```
RequestPattern$to_s()
```

Returns: a string

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
RequestPattern$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

See Also

pattern classes for HTTP method [MethodPattern](#), headers [HeadersPattern](#), body [BodyPattern](#), and URI/URL [UriPattern](#)

Examples

```
## Not run:
(x <- RequestPattern$new(method = "get", uri = "httpbin.org/get"))
x$body_pattern
x$headers_pattern
x$method_pattern
x$uri_pattern
x$to_s()

# make a request signature
rs <- RequestSignature$new(method = "get", uri = "http://httpbin.org/get")

# check if it matches
x$matches(rs)

# regex uri
(x <- RequestPattern$new(method = "get", uri_regex = ".+ossref.org"))
x$uri_pattern
x$uri_pattern$to_s()
x$to_s()

# uri with query parameters
(x <- RequestPattern$new(
  method = "get", uri = "https://httpbin.org/get",
```

```

    query = list(foo = "bar")
  ))
  x$to_s()
  ## query params included in url, not separately
  (x <- RequestPattern$new(
    method = "get", uri = "https://httpbin.org/get?stuff=things"
  ))
  x$to_s()
  x$query_params

# just headers (via setting method=any & uri_regex=.)
headers <- list(
  "User-Agent" = "Apple",
  "Accept-Encoding" = "gzip, deflate",
  "Accept" = "application/json, text/xml, application/xml, */*"
)
x <- RequestPattern$new(
  method = "any",
  uri_regex = ".+",
  headers = headers
)
x$to_s()
rs <- RequestSignature$new(
  method = "any", uri = "http://foo.bar",
  options = list(headers = headers)
)
rs
x$matches(rs)

# body
x <- RequestPattern$new(
  method = "post", uri = "httpbin.org/post",
  body = list(y = crul::upload(system.file("CITATION")))
)
x$to_s()
rs <- RequestSignature$new(
  method = "post", uri = "http://httpbin.org/post",
  options = list(
    body = list(y = crul::upload(system.file("CITATION")))
  )
)
rs
x$matches(rs)

# basic auth
x <- RequestPattern$new(
  method = "post",
  uri = "httpbin.org/post",
  basic_auth = c("user", "pass")
)
x
x$headers_pattern$to_s()
x$to_s()

```

```

rs <- RequestSignature$new(
  method = "post", uri = "http://httpbin.org/post",
  options = list(headers = prep_auth("user:pass"))
)
rs
x$matches(rs) # TRUE
rs <- RequestSignature$new(
  method = "post", uri = "http://httpbin.org/post",
  options = list(headers = prep_auth("user:longpassword"))
)
x$matches(rs) # FALSE

## End(Not run)

```

RequestRegistry	<i>RequestRegistry</i>
-----------------	------------------------

Description

keeps track of HTTP requests

Public fields

request_signatures a HashCounter object

Methods

Public methods:

- [RequestRegistry#print\(\)](#)
- [RequestRegistry\\$reset\(\)](#)
- [RequestRegistry\\$register_request\(\)](#)
- [RequestRegistry\\$times_executed\(\)](#)
- [RequestRegistry\\$clone\(\)](#)

Method print(): print method for the RequestRegistry class

Usage:

RequestRegistry#print(x, ...)

Arguments:

x self

... ignored

Method reset(): Reset the registry to no registered requests

Usage:

RequestRegistry\$reset()

Returns: nothing returned; resets registry to no requests

Method `register_request()`: Register a request

Usage:

```
RequestRegistry$register_request(request)
```

Arguments:

`request` a character string of the request, serialized from a `RequestSignature$new(...)$to_s()`

Returns: nothing returned; registers the request

Method `times_executed()`: How many times has a request been made

Usage:

```
RequestRegistry$times_executed(request_pattern)
```

Arguments:

`request_pattern` an object of class `RequestPattern`

Details: if no match is found for the request pattern, 0 is returned

Returns: integer, the number of times the request has been made

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
RequestRegistry$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

See Also

[stub_registry\(\)](#) and [StubRegistry](#)

Other request-registry: [HashCounter](#), [request_registry\(\)](#)

Examples

```
x <- RequestRegistry$new()
z1 <- RequestSignature$new("get", "http://scottchamberlain.info")
z2 <- RequestSignature$new("post", "https://httpbin.org/post")
x$register_request(request = z1)
x$register_request(request = z1)
x$register_request(request = z2)
# print method to list requests
x

# more complex requests
w <- RequestSignature$new(
  method = "get",
  uri = "https://httpbin.org/get",
  options = list(headers = list(`User-Agent` = "foobar", stuff = "things"))
)
w$to_s()
x$register_request(request = w)
x
```

```

# hashes, and number of times each requested
x$request_signatures$hash

# times_executed method
pat <- RequestPattern$new(
  method = "get",
  uri = "https://httpbin.org/get",
  headers = list(`User-Agent` = "foobar", stuff = "things")
)
pat$to_s()
x$times_executed(pat)
z <- RequestPattern$new(method = "get", uri = "http://scottchamberlain.info")
x$times_executed(z)
w <- RequestPattern$new(method = "post", uri = "https://httpbin.org/post")
x$times_executed(w)

## pattern with no matches - returns 0 (zero)
pat <- RequestPattern$new(
  method = "get",
  uri = "http://recology.info/"
)
pat$to_s()
x$times_executed(pat)

# reset the request registry
x$reset()

```

RequestSignature

RequestSignature

Description

General purpose request signature builder

Public fields

method (character) an http method
 uri (character) a uri
 body (various) request body
 headers (list) named list of headers
 proxies (list) proxies as a named list
 auth (list) authentication details, as a named list
 url internal use
 disk (character) if writing to disk, the path
 fields (various) request body details
 output (various) request output details, disk, memory, etc

Methods

Public methods:

- [RequestSignature\\$new\(\)](#)
- [RequestSignature\\$print\(\)](#)
- [RequestSignature\\$to_s\(\)](#)
- [RequestSignature\\$clone\(\)](#)

Method `new()`: Create a new RequestSignature object

Usage:

```
RequestSignature$new(method, uri, options = list())
```

Arguments:

`method` the HTTP method (any, head, options, get, post, put, patch, trace, or delete). "any" matches any HTTP method. required.

`uri` (character) request URI. required.

`options` (list) options. optional. See Details.

Returns: A new RequestSignature object

Method `print()`: print method for the RequestSignature class

Usage:

```
RequestSignature$print()
```

Arguments:

`x` self

... ignored

Method `to_s()`: Request signature to a string

Usage:

```
RequestSignature$to_s()
```

Returns: a character string representation of the request signature

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
RequestSignature$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

Examples

```
# make request signature
x <- RequestSignature$new(method = "get", uri = "https://httpbin.org/get")
# method
x$method
# uri
x$uri
# request signature to string
```

```
x$to_s()

# headers
w <- RequestSignature$new(
  method = "get",
  uri = "https://httpbin.org/get",
  options = list(headers = list(`User-Agent` = "foobar", stuff = "things"))
)
w
w$headers
w$to_s()

# headers and body
bb <- RequestSignature$new(
  method = "get",
  uri = "https://httpbin.org/get",
  options = list(
    headers = list(`User-Agent` = "foobar", stuff = "things"),
    body = list(a = "tables")
  )
)
bb
bb$headers
bb$body
bb$to_s()

# with disk path
f <- tempfile()
bb <- RequestSignature$new(
  method = "get",
  uri = "https://httpbin.org/get",
  options = list(disk = f)
)
bb
bb$disk
bb$to_s()
```

request_registry

List or clear requests in the request registry

Description

List or clear requests in the request registry

Usage

```
request_registry()
```

```
request_registry_clear()
```

Details

`request_registry()` lists the requests that have been made that webmockr knows about; `request_registry_clear()` resets the request registry (removes all recorded requests)

Value

an object of class `RequestRegistry`, `print` method gives the requests in the registry and the number of times each one has been performed

See Also

Other request-registry: [HashCounter](#), [RequestRegistry](#)

Examples

```
webmockr::enable()
stub_request("get", "https://httpbin.org/get") %>%
  to_return(body = "success!", status = 200)

# nothing in the request registry
request_registry()

# make the request
z <- crul::HttpClient$new(url = "https://httpbin.org")$get("get")

# check the request registry - the request was made 1 time
request_registry()

# do the request again
z <- crul::HttpClient$new(url = "https://httpbin.org")$get("get")

# check the request registry - now it's been made 2 times, yay!
request_registry()

# clear the request registry
request_registry_clear()
webmockr::disable()
```

Response

Response

Description

custom webmockr http response class

Public fields

url (character) a url
body (various) list, character, etc
content (various) response content/body
request_headers (list) a named list
response_headers (list) a named list
options (character) list
status_code (integer) an http status code
exception (character) an exception message
should_timeout (logical) should the response timeout?

Methods**Public methods:**

- [Response\\$new\(\)](#)
- [Response#print\(\)](#)
- [Response\\$set_url\(\)](#)
- [Response\\$get_url\(\)](#)
- [Response\\$set_request_headers\(\)](#)
- [Response\\$get_request_headers\(\)](#)
- [Response\\$set_response_headers\(\)](#)
- [Response\\$get_response_headers\(\)](#)
- [Response\\$set_body\(\)](#)
- [Response\\$get_body\(\)](#)
- [Response\\$set_status\(\)](#)
- [Response\\$get_status\(\)](#)
- [Response\\$set_exception\(\)](#)
- [Response\\$get_exception\(\)](#)
- [Response\\$clone\(\)](#)

Method new(): Create a new Response object

Usage:

```
Response$new(options = list())
```

Arguments:

options (list) a list of options

Returns: A new Response object

Method print(): print method for the Response class

Usage:

```
Response#print(x, ...)
```

Arguments:

x self
... ignored

Method `set_url()`: set the url for the response

Usage:

`Response$set_url(url)`

Arguments:

`url` (character) a url

Returns: nothing returned; sets url

Method `get_url()`: get the url for the response

Usage:

`Response$get_url()`

Returns: (character) a url

Method `set_request_headers()`: set the request headers for the response

Usage:

`Response$set_request_headers(headers, capitalize = TRUE)`

Arguments:

`headers` (list) named list

`capitalize` (logical) whether to capitalize first letters of each header; default: TRUE

Returns: nothing returned; sets request headers on the response

Method `get_request_headers()`: get the request headers for the response

Usage:

`Response$get_request_headers()`

Returns: (list) request headers, a named list

Method `set_response_headers()`: set the response headers for the response

Usage:

`Response$set_response_headers(headers, capitalize = TRUE)`

Arguments:

`headers` (list) named list

`capitalize` (logical) whether to capitalize first letters of each header; default: TRUE

Returns: nothing returned; sets response headers on the response

Method `get_response_headers()`: get the response headers for the response

Usage:

`Response$get_response_headers()`

Returns: (list) response headers, a named list

Method `set_body()`: set the body of the response

Usage:

```
Response$set_body(body, disk = FALSE)
```

Arguments:

body (various types)

disk (logical) whether its on disk; default: FALSE

Returns: nothing returned; sets body on the response

Method `get_body()`: get the body of the response

Usage:

```
Response$get_body()
```

Returns: various

Method `set_status()`: set the http status of the response

Usage:

```
Response$set_status(status)
```

Arguments:

status (integer) the http status

Returns: nothing returned; sets the http status of the response

Method `get_status()`: get the http status of the response

Usage:

```
Response$get_status()
```

Returns: (integer) the http status

Method `set_exception()`: set an exception

Usage:

```
Response$set_exception(exception)
```

Arguments:

exception (character) an exception string

Returns: nothing returned; sets an exception

Method `get_exception()`: get the exception, if set

Usage:

```
Response$get_exception()
```

Returns: (character) an exception

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
Response$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

Examples

```
## Not run:
(x <- Response$new())

x$set_url("https://httpbin.org/get")
x

x$set_request_headers(list("Content-Type" = "application/json"))
x
x$request_headers

x$set_response_headers(list("Host" = "httpbin.org"))
x
x$response_headers

x$set_status(404)
x
x$get_status()

x$set_body("hello world")
x
x$get_body()
# raw body
x$set_body(charToRaw("hello world"))
x
x$get_body()

x$set_exception("exception")
x
x$get_exception()

## End(Not run)
```

StubbedRequest

StubbedRequest

Description

stubbed request class underlying [stub_request\(\)](#)

Public fields

method (xx) xx
uri (xx) xx
uri_regex (xx) xx
regex a logical
uri_parts (xx) xx
host (xx) xx

query (xx) xx
 body (xx) xx
 basic_auth (xx) xx
 request_headers (xx) xx
 response_headers (xx) xx
 responses_sequences (xx) xx
 status_code (xx) xx
 counter a StubCounter object

Methods

Public methods:

- [StubbedRequest\\$new\(\)](#)
- [StubbedRequest#print\(\)](#)
- [StubbedRequest\\$with\(\)](#)
- [StubbedRequest\\$to_return\(\)](#)
- [StubbedRequest\\$to_timeout\(\)](#)
- [StubbedRequest\\$to_raise\(\)](#)
- [StubbedRequest\\$to_s\(\)](#)
- [StubbedRequest\\$reset\(\)](#)
- [StubbedRequest\\$clone\(\)](#)

Method `new()`: Create a new StubbedRequest object

Usage:

```
StubbedRequest$new(method, uri = NULL, uri_regex = NULL)
```

Arguments:

`method` the HTTP method (any, head, get, post, put, patch, or delete). "any" matches any HTTP method. required.

`uri` (character) request URI. either this or `uri_regex` required. **webmockr** can match `uri`'s without the "http" scheme, but does not match if the scheme is "https". required, unless `uri_regex` given. See [UriPattern](#) for more.

`uri_regex` (character) request URI as regex. either this or `uri` required

Returns: A new StubbedRequest object

Method `print()`: print method for the StubbedRequest class

Usage:

```
StubbedRequest#print(x, ...)
```

Arguments:

`x` self

`...` ignored

Method `with()`: Set expectations for what's given in HTTP request

Usage:

```
StubbedRequest$with(  
  query = NULL,  
  body = NULL,  
  headers = NULL,  
  basic_auth = NULL  
)
```

Arguments:

query (list) request query params, as a named list. optional

body (list) request body, as a named list. optional

headers (list) request headers as a named list. optional.

basic_auth (character) basic authentication. optional.

Returns: nothing returned; sets only

Method `to_return()`: Set expectations for what's returned in HTTP response

Usage:

```
StubbedRequest$to_return(status, body, headers)
```

Arguments:

status (numeric) an HTTP status code

body (list) response body, one of: character, json, list, raw, numeric, NULL, FALSE, or a file connection (other connection types not supported)

headers (list) named list, response headers. optional.

Returns: nothing returned; sets whats to be returned

Method `to_timeout()`: Response should time out

Usage:

```
StubbedRequest$to_timeout()
```

Returns: nothing returned

Method `to_raise()`: Response should raise an exception x

Usage:

```
StubbedRequest$to_raise(x)
```

Arguments:

x (character) an exception message

Returns: nothing returned

Method `to_s()`: Response as a character string

Usage:

```
StubbedRequest$to_s()
```

Returns: (character) the response as a string

Method `reset()`: Reset the counter for the stub

Usage:

```
StubbedRequest$reset()
```

Returns: nothing returned; resets stub counter to no requests

Method clone(): The objects of this class are cloneable with this method.

Usage:

```
StubbedRequest$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

See Also

[stub_request\(\)](#)

Examples

```
## Not run:
x <- StubbedRequest$new(method = "get", uri = "api.crossref.org")
x$method
x$uri
x$with(headers = list("User-Agent" = "R", apple = "good"))
x$to_return(status = 200, body = "foobar", headers = list(a = 5))
x
x$to_s()

# query
x <- StubbedRequest$new(method = "get", uri = "httpbin.org")
x$with(query = list(a = 5))
x
x$to_s()
## including
x <- StubbedRequest$new(method = "get", uri = "httpbin.org")
x$with(query = including(list(a = 5)))
x
x$to_s()
x$with(query = including(list(a = 5, b = 7)))
x$to_s()
## excluding
x <- StubbedRequest$new(method = "get", uri = "httpbin.org")
x$with(query = excluding(list(a = 5)))
x
x$to_s()

# many to_return's
x <- StubbedRequest$new(method = "get", uri = "httpbin.org")
x$to_return(status = 200, body = "foobar", headers = list(a = 5))
x$to_return(status = 200, body = "bears", headers = list(b = 6))
x
x$to_s()

# raw body
x <- StubbedRequest$new(method = "get", uri = "api.crossref.org")
```

```
x$to_return(status = 200, body = raw(0), headers = list(a = 5))
x$to_s()
x

x <- StubbedRequest$new(method = "get", uri = "api.crossref.org")
x$to_return(
  status = 200, body = charToRaw("foo bar"),
  headers = list(a = 5)
)
x$to_s()
x

# basic auth
x <- StubbedRequest$new(method = "get", uri = "api.crossref.org")
x$with(basic_auth = c("foo", "bar"))
x$to_s()
x

# file path
x <- StubbedRequest$new(method = "get", uri = "api.crossref.org")
f <- tempfile()
x$to_return(status = 200, body = file(f), headers = list(a = 5))
x
x$to_s()
unlink(f)

# to_file(): file path and payload to go into the file
# payload written to file during mocked response creation
x <- StubbedRequest$new(method = "get", uri = "api.crossref.org")
f <- tempfile()
x$to_return(
  status = 200, body = mock_file(f, "{\"foo\": \"bar\"}"),
  headers = list(a = 5)
)
x
x$to_s()
unlink(f)

# uri_regex
(x <- StubbedRequest$new(method = "get", uri_regex = ".+ossref.org"))
x$method
x$uri_regex
x$to_s()

# to timeout
(x <- StubbedRequest$new(method = "get", uri_regex = ".+ossref.org"))
x$to_s()
x$to_timeout()
x$to_s()
x

# to raise
library(fauxpas)
```

```
(x <- StubbedRequest$new(method = "get", uri_regex = ".+ossref.org"))
x$to_s()
x$to_raise(HTTPBadGateway)
x$to_s()
x

## End(Not run)
```

StubCounter

StubCounter

Description

hash with counter to store requests and count number of requests made against the stub

Public fields

hash (list) a list for internal use only, with elements key, sig, and count

Methods

Public methods:

- [StubCounter\\$put\(\)](#)
- [StubCounter\\$count\(\)](#)
- [StubCounter\\$clone\(\)](#)

Method `put()`: Register a request by it's key

Usage:

```
StubCounter$put(x)
```

Arguments:

x an object of class RequestSignature

Returns: nothing returned; registers request & iterates internal counter

Method `count()`: Get the count of number of times any matching request has been made against this stub

Usage:

```
StubCounter$count()
```

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
StubCounter$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

Examples

```
x <- StubCounter$new()
x
x$hash
x$count()
z <- RequestSignature$new(method = "get", uri = "https://httpbin.org/get")
x$put(z)
x$count()
x$put(z)
x$count()
```

StubRegistry

StubRegistry

Description

stub registry to keep track of [StubbedRequest](#) stubs

Public fields

request_stubs (list) list of request stubs

Methods**Public methods:**

- [StubRegistry#print\(\)](#)
- [StubRegistry\\$register_stub\(\)](#)
- [StubRegistry\\$find_stubbed_request\(\)](#)
- [StubRegistry\\$request_stub_for\(\)](#)
- [StubRegistry\\$remove_request_stub\(\)](#)
- [StubRegistry\\$remove_all_request_stubs\(\)](#)
- [StubRegistry\\$is_registered\(\)](#)
- [StubRegistry\\$is_stubbed\(\)](#)
- [StubRegistry\\$clone\(\)](#)

Method [print\(\)](#): print method for the StubRegistry class

Usage:

```
StubRegistry#print(x, ...)
```

Arguments:

x self

... ignored

Method [register_stub\(\)](#): Register a stub

Usage:

```
StubRegistry$register_stub(stub)
```

Arguments:

stub an object of type [StubbedRequest](#)

Returns: nothing returned; registers the stub

Method find_stubbed_request(): Find a stubbed request

Usage:

```
StubRegistry$find_stubbed_request(req)
```

Arguments:

req an object of class [RequestSignature](#)

Returns: an object of type [StubbedRequest](#), if matched

Method request_stub_for(): Find a stubbed request

Usage:

```
StubRegistry$request_stub_for(request_signature, count = TRUE)
```

Arguments:

request_signature an object of class [RequestSignature](#)

count (bool) iterate counter or not. default: TRUE

Returns: logical, 1 or more

Method remove_request_stub(): Remove a stubbed request by matching request signature

Usage:

```
StubRegistry$remove_request_stub(stub)
```

Arguments:

stub an object of type [StubbedRequest](#)

Returns: nothing returned; removes the stub from the registry

Method remove_all_request_stubs(): Remove all request stubs

Usage:

```
StubRegistry$remove_all_request_stubs()
```

Returns: nothing returned; removes all request stubs

Method is_registered(): Find a stubbed request from a request signature

Usage:

```
StubRegistry$is_registered(x)
```

Arguments:

x an object of class [RequestSignature](#)

Returns: nothing returned; registers the stub

Method is_stubbed(): Check if a stubbed request is in the stub registry

Usage:

```
StubRegistry$is_stubbed(stub)
```


Arguments:

stub an object of class [StubbedRequest](#)

Returns: single boolean, TRUE or FALSE

Method clone(): The objects of this class are cloneable with this method.

Usage:

```
StubRegistry$clone(deep = FALSE)
```

Arguments:

deep Whether to make a deep clone.

See Also

Other stub-registry: [remove_request_stub\(\)](#), [stub_registry\(\)](#), [stub_registry_clear\(\)](#)

Examples

```
## Not run:
# Make a stub
stub1 <- StubbedRequest$new(method = "get", uri = "api.crossref.org")
stub1$with(headers = list("User-Agent" = "R"))
stub1$to_return(status = 200, body = "foobar", headers = list())
stub1

# Make another stub
stub2 <- StubbedRequest$new(method = "get", uri = "api.crossref.org")
stub2

# Put both stubs in the stub registry
reg <- StubRegistry$new()
reg$register_stub(stub = stub1)
reg$register_stub(stub = stub2)
reg
reg$request_stubs

## End(Not run)
```

stub_body_diff	<i>Get a diff of a stub request body and a request body from an http request</i>
----------------	--

Description

Requires the Suggested package `diffobj`

Usage

```
stub_body_diff(stub = last_stub(), request = last_request())
```

Arguments

stub	object of class StubbedRequest. required. default is to call <code>last_stub()</code> , which gets the last stub created
request	object of class RequestSignature. required. default is to call <code>last_request()</code> , which gets the last stub created

Details

Returns error message if either `stub` or `request` are NULL. Even though you may not intentionally pass in a NULL, the return values of `last_stub()` and `last_request()` when there's nothing found is NULL.

Under the hood the Suggested package `diffobj` is used to do the comparison.

Value

object of class `Diff` from the `diffobj` package

See Also

`webmockr_configure()` to toggle webmockr showing request body diffs when there's not a match. `stub_body_diff()` is offered as a manual way to compare requests and stubs - whereas turning on with `webmockr_configure()` will do the diff for you.

Examples

```
# stops with error if no stub and request
request_registry_clear()
stub_registry_clear()
stub_body_diff()

# Gives diff when there's a stub and request found - however, no request body
stub_request("get", "https://hb.opencpu.org/get")
enable()
library(crul)
HttpClient$new("https://hb.opencpu.org")$get(path = "get")
stub_body_diff()

# Gives diff when there's a stub and request found - with request body
stub_request("post", "https://hb.opencpu.org/post") %>%
  with(body = list(apple = "green"))
enable()
library(crul)
HttpClient$new("https://hb.opencpu.org")$post(
  path = "post", body = list(apple = "red")
)
stub_body_diff()

# Gives diff when there's a stub and request found - with request body
stub_request("post", "https://hb.opencpu.org/post") %>%
  with(body = "the quick brown fox")
```

```
HttpClient$new("https://hb.opencpu.org")$post(  
  path = "post", body = "the quick black fox"  
)  
stub_body_diff()
```

stub_registry *List stubs in the stub registry*

Description

List stubs in the stub registry

Usage

```
stub_registry()
```

Value

an object of class `StubRegistry`, print method gives the stubs in the registry

See Also

Other stub-registry: [StubRegistry](#), [remove_request_stub\(\)](#), [stub_registry_clear\(\)](#)

Examples

```
# make a stub  
stub_request("get", "https://httpbin.org/get") %>%  
  to_return(body = "success!", status = 200)  
  
# check the stub registry, there should be one in there  
stub_registry()  
  
# make another stub  
stub_request("get", "https://httpbin.org/get") %>%  
  to_return(body = "woopsy", status = 404)  
  
# check the stub registry, now there are two there  
stub_registry()  
  
# to clear the stub registry  
stub_registry_clear()
```

stub_registry_clear *stub_registry_clear*

Description

Clear all stubs in the stub registry

Usage

```
stub_registry_clear()
```

Value

an empty list invisibly

See Also

Other stub-registry: [StubRegistry](#), [remove_request_stub\(\)](#), [stub_registry\(\)](#)

Examples

```
(x <- stub_request("get", "https://httpbin.org/get"))
stub_registry()
stub_registry_clear()
stub_registry()
```

stub_request *Stub an http request*

Description

Stub an http request

Usage

```
stub_request(method = "get", uri = NULL, uri_regex = NULL)
```

Arguments

method	(character) HTTP method, one of "get", "post", "put", "patch", "head", "delete", "options" - or the special "any" (for any method)
uri	(character) The request uri. Can be a full or partial uri. webmockr can match uri's without the "http" scheme, but does not match if the scheme is "https". required, unless uri_regex given. See UriPattern for more. See the "uri vs. uri_regex" section
uri_regex	(character) A URI represented as regex. required, if uri not given. See examples and the "uri vs. uri_regex" section

Details

Internally, this calls [StubbedRequest](#) which handles the logic

See [stub_registry\(\)](#) for listing stubs, [stub_registry_clear\(\)](#) for removing all stubs and [remove_request_stub\(\)](#) for removing specific stubs

If multiple stubs match the same request, we use the first stub. So if you want to use a stub that was created after an earlier one that matches, remove the earlier one(s).

Note on [wi_th\(\)](#): If you pass query, values are coerced to character class in the recorded stub. You can pass numeric, integer, etc., but all will be coerced to character.

See [wi_th\(\)](#) for details on request body/query/headers and [to_return\(\)](#) for details on how response status/body/headers are handled

Value

an object of class `StubbedRequest`, with `print` method describing the stub.

uri vs. uri_regex

When you use `uri`, we compare the URIs without query params AND also the query params themselves without the URIs.

When you use `uri_regex` we don't compare URIs and query params; we just use your regex string defined in `uri_regex` as the pattern for a call to [grepl](#)

Mocking writing to disk

See [mocking-disk-writing](#)

Error handling

To construct stubs, one uses [stub_request\(\)](#) first - which registers the stub in the stub registry. Any additional calls to modify the stub with for example [wi_th\(\)](#) or [to_return\(\)](#) can error. In those error cases we ideally want to remove (unregister) the stub because you certainly don't want a registered stub that is not exactly what you intended.

When you encounter an error creating a stub you should see a warning message that the stub has been removed, for example:

```
stub_request("get", "https://httpbin.org/get") %>%
  wi_th(query = mtcars)
#> Error in `wi_th()`:
#> ! z$query must be of class list or partial
#> Run `rlang::last_trace()` to see where the error occurred.
#> Warning message:
#> Encountered an error constructing stub
#> • Removed stub
#> • To see a list of stubs run stub_registry()
```

Note

Trailing slashes are dropped from stub URIs before matching

See Also

[wi_th\(\)](#), [to_return\(\)](#), [to_timeout\(\)](#), [to_raise\(\)](#), [mock_file\(\)](#)

Examples

```
## Not run:
# basic stubbing
stub_request("get", "https://httpbin.org/get")
stub_request("post", "https://httpbin.org/post")

# any method, use "any"
stub_request("any", "https://httpbin.org/get")

# list stubs
stub_registry()

# request headers
stub_request("get", "https://httpbin.org/get") %>%
  wi_th(headers = list("User-Agent" = "R"))

# request body
stub_request("post", "https://httpbin.org/post") %>%
  wi_th(body = list(foo = "bar"))
stub_registry()
library(crul)
x <- crul::HttpClient$new(url = "https://httpbin.org")
crul::mock()
x$post("post", body = list(foo = "bar"))

# add expectation with to_return
stub_request("get", "https://httpbin.org/get") %>%
  wi_th(
    query = list(hello = "world"),
    headers = list("User-Agent" = "R")
  ) %>%
  to_return(status = 200, body = "stuff", headers = list(a = 5))

# list stubs again
stub_registry()

# regex
stub_request("get", uri_regex = ".+ample\\.\\.")

# set stub an expectation to timeout
stub_request("get", "https://httpbin.org/get") %>% to_timeout()
x <- crul::HttpClient$new(url = "https://httpbin.org")
res <- x$get("get")

# raise exception
library(fauxpas)
stub_request("get", "https://httpbin.org/get") %>% to_raise(HTTPAccepted)
stub_request("get", "https://httpbin.org/get") %>%
```

```

    to_raise(HTTPAccepted, HTTPGone)

x <- crul::HttpClient$new(url = "https://httpbin.org")
stub_request("get", "https://httpbin.org/get") %>% to_raise(HTTPBadGateway)
crul::mock()
x$get("get")

# pass a list to .list
z <- stub_request("get", "https://httpbin.org/get")
wi_th(z, .list = list(query = list(foo = "bar")))

# just body
stub_request("any", uri_regex = ".+") %>%
  wi_th(body = list(foo = "bar"))
## with crul
library(crul)
x <- crul::HttpClient$new(url = "https://httpbin.org")
crul::mock()
x$post("post", body = list(foo = "bar"))
x$put("put", body = list(foo = "bar"))
## with httr
library(httr)
httr_mock()
POST("https://example.com", body = list(foo = "bar"))
PUT("https://google.com", body = list(foo = "bar"))

# just headers
headers <- list(
  "Accept-Encoding" = "gzip, deflate",
  "Accept" = "application/json, text/xml, application/xml, */*"
)
stub_request("any", uri_regex = ".+") %>% wi_th(headers = headers)
library(crul)
x <- crul::HttpClient$new(url = "https://httpbin.org", headers = headers)
crul::mock()
x$post("post")
x$put("put", body = list(foo = "bar"))
x$get("put", query = list(stuff = 3423234L))

# many responses
## the first response matches the first to_return call, and so on
stub_request("get", "https://httpbin.org/get") %>%
  to_return(status = 200, body = "foobar", headers = list(a = 5)) %>%
  to_return(status = 200, body = "bears", headers = list(b = 6))
con <- crul::HttpClient$new(url = "https://httpbin.org")
con$get("get")$parse("UTF-8")
con$get("get")$parse("UTF-8")

## OR, use times with to_return() to repeat the same response many times
library(fauxpas)
stub_request("get", "https://httpbin.org/get") %>%
  to_return(status = 200, body = "apple-pie", times = 2) %>%

```

```

    to_raise(HTTPUnauthorized)
con <- crul::HttpClient$new(url = "https://httpbin.org")
con$get("get")$parse("UTF-8")
con$get("get")$parse("UTF-8")
con$get("get")$parse("UTF-8")

# partial matching
## query parameters
library(httr)
enable()
### matches
stub_request("get", "https://hb.opencpu.org/get") %>%
  wi_th(query = including(list(fruit = "pear"))) %>%
  to_return(body = "matched on partial query!")
resp <- GET("https://hb.opencpu.org/get",
  query = list(fruit = "pear", bread = "scone")
)
rawToChar(content(resp))
### doesn't match
stub_registry_clear()
stub_request("get", "https://hb.opencpu.org/get") %>%
  wi_th(query = list(fruit = "pear")) %>%
  to_return(body = "didn't match, ugh!")
# GET("https://hb.opencpu.org/get",
#   query = list(fruit = "pear", meat = "chicken"))

## request body
### matches - including
stub_request("post", "https://hb.opencpu.org/post") %>%
  wi_th(body = including(list(fruit = "pear"))) %>%
  to_return(body = "matched on partial body!")
resp <- POST("https://hb.opencpu.org/post",
  body = list(fruit = "pear", meat = "chicken")
)
rawToChar(content(resp))
### matches - excluding
stub_request("post", "https://hb.opencpu.org/post") %>%
  wi_th(body = excluding(list(fruit = "pear"))) %>%
  to_return(body = "matched on partial body!")
res <- POST("https://hb.opencpu.org/post",
  body = list(color = "blue")
)
rawToChar(content(res))
# POST("https://hb.opencpu.org/post",
#   body = list(fruit = "pear", meat = "chicken"))

# clear all stubs
stub_registry()
stub_registry_clear()

## End(Not run)

```

to_raise	<i>Set raise error condition</i>
----------	----------------------------------

Description

Set raise error condition

Usage

```
to_raise(.data, ...)
```

Arguments

.data	input. Anything that can be coerced to a <code>StubbedRequest</code> class object
...	One or more HTTP exceptions from the fauxpas package. Run <code>grep("HTTP*", getNamespaceExports("fauxpas"), value = TRUE)</code> for a list of possible exceptions

Details

The behavior in the future will be:

When multiple exceptions are passed, the first is used on the first mock, the second on the second mock, and so on. Subsequent mocks use the last exception

But for now, only the first exception is used until we get that fixed

Value

an object of class `StubbedRequest`, with `print` method describing the stub

Raise vs. Return

`to_raise()` always raises a stop condition, while `to_return(status=xyz)` only sets the status code on the returned HTTP response object. So if you want to raise a stop condition then `to_raise()` is what you want. But if you don't want to raise a stop condition use `to_return()`. Use cases for each vary. For example, in a unit test you may have a test expecting a 503 error; in this case `to_raise()` makes sense. In another case, if a unit test expects to test some aspect of an HTTP response object that `httr`, `httr2`, or `crul` typically returns, then you'll want `to_return()`.

Note

see examples in [stub_request\(\)](#)

to_return

Expectation for what's returned from a stubbed request

Description

Set response status code, response body, and/or response headers

Usage

```
to_return(.data, ..., .list = list(), times = 1)
```

Arguments

.data	input. Anything that can be coerced to a StubbedRequest class object
...	Comma separated list of named variables. accepts the following: status, body, headers. See Details for more.
.list	named list, has to be one of 'status', 'body', and/or 'headers'. An alternative to passing in via Don't pass the same thing to both, e.g. don't pass 'status' to ..., and also 'status' to this parameter
times	(integer) number of times the given response should be returned; default: 1. value must be greater than or equal to 1. Very large values probably don't make sense, but there's no maximum value. See Details.

Details

Values for status, body, and headers:

- status: (numeric/integer) three digit status code
- body: various: character, json, list, raw, numeric, NULL, FALSE, a file connection (other connection types not supported), or a mock_file function call (see [mock_file\(\)](#))
- headers: (list) a named list, must be named

response headers are returned with all lowercase names and the values are all of type character. if numeric/integer values are given (e.g., `to_return(headers = list(a = 10))`), we'll coerce any numeric/integer values to character.

Value

an object of class StubbedRequest, with print method describing the stub

multiple to_return()

You can add more than one `to_return()` to a webmockr stub (including [to_raise\(\)](#), [to_timeout\(\)](#)). Each one is a HTTP response returned. That is, you'll match to an HTTP request based on `stub_request()` and `with()`; the first time the request is made, the first response is returned; the second time the request is made, the second response is returned; and so on.

Be aware that webmockr has to track number of requests (see [request_registry\(\)](#)), and so if you use multiple `to_return()` or the `times` parameter, you must clear the request registry in order to go back to mocking responses from the start again. [webmockr_reset\(\)](#) clears the stub registry and the request registry, after which you can use multiple responses again (after creating your stub(s) again of course)

Raise vs. Return

`to_raise()` always raises a stop condition, while `to_return(status=xyz)` only sets the status code on the returned HTTP response object. So if you want to raise a stop condition then `to_raise()` is what you want. But if you don't want to raise a stop condition use `to_return()`. Use cases for each vary. For example, in a unit test you may have a test expecting a 503 error; in this case `to_raise()` makes sense. In another case, if a unit test expects to test some aspect of an HTTP response object that `httr`, `httr2`, or `curl` typically returns, then you'll want `to_return()`.

Note

see more examples in [stub_request\(\)](#)

Examples

```
# first, make a stub object
foo <- function() {
  stub_request("post", "https://httpbin.org/post")
}

# add status, body and/or headers
foo() %>% to_return(status = 200)
foo() %>% to_return(body = "stuff")
foo() %>% to_return(body = list(a = list(b = "world")))
foo() %>% to_return(headers = list(a = 5))
foo() %>%
  to_return(status = 200, body = "stuff", headers = list(a = 5))

# .list - pass in a named list instead
foo() %>% to_return(.list = list(body = list(foo = "bar")))

# multiple responses using chained `to_return()`
foo() %>%
  to_return(body = "stuff") %>%
  to_return(body = "things")

# many of the same response using the times parameter
foo() %>% to_return(body = "stuff", times = 3)
```

Description

Set timeout as an expected return on a match

Usage

```
to_timeout(.data)
```

Arguments

`.data` input. Anything that can be coerced to a `StubbedRequest` class object

Value

an object of class `StubbedRequest`, with `print` method describing the stub

Note

see examples in [stub_request\(\)](#)

webmockr-defunct *Defunct functions in webmockr*

Description

- `webmockr_enable()`: Function removed, see [enable\(\)](#)
- `webmockr_disable()`: Function removed, see [disable\(\)](#)
- `to_return_`: Only `to_return()` is available now
- `wi_th_`: Only `wi_th()` is available now

webmockr_configure *webmockr configuration*

Description

webmockr configuration

Usage

```

webmockr_configure(
  allow_net_connect = FALSE,
  allow_localhost = FALSE,
  allow = NULL,
  show_stubbing_instructions = TRUE,
  show_body_diff = FALSE
)

webmockr_configure_reset()

webmockr_configuration()

webmockr_allow_net_connect()

webmockr_disable_net_connect(allow = NULL)

webmockr_net_connect_allowed(uri = NULL)

```

Arguments

`allow_net_connect` (logical) Default: FALSE

`allow_localhost` (logical) Default: FALSE

`allow` (character) one or more URI/URL to allow (and by extension all others are not allowed)

`show_stubbing_instructions` (logical) Default: TRUE. If FALSE, stubbing instructions are not shown

`show_body_diff` (logical) Default: FALSE. If TRUE show's a diff of the stub's request body and the http request body. See also [stub_body_diff\(\)](#) for manually comparing request and stub bodies. Under the hood the Suggested package `diffobj` is required to do the comparison.

`uri` (character) a URI/URL as a character string - to determine whether or not it is allowed

webmockr_allow_net_connect

If there are stubs found for a request, even if net connections are allowed (by running `webmockr_allow_net_connect()`) the stubbed response will be returned. If no stub is found, and net connections are allowed, then a real HTTP request can be made.

Examples

```

## Not run:
webmockr_configure()
webmockr_configure(
  allow_localhost = TRUE

```

```
)
webmockr_configuration()
webmockr_configure_reset()

webmockr_allow_net_connect()
webmockr_net_connect_allowed()

# disable net connect for any URIs
webmockr_disable_net_connect()
### gives NULL with no URI passed
webmockr_net_connect_allowed()
# disable net connect EXCEPT FOR given URIs
webmockr_disable_net_connect(allow = "google.com")
### is a specific URI allowed?
webmockr_net_connect_allowed("google.com")

# show body diff
webmockr_configure(show_body_diff = TRUE)

## End(Not run)
```

webmockr_reset

webmockr_reset

Description

Clear all stubs and the request counter

Usage

```
webmockr_reset()
```

Details

this function runs [stub_registry_clear\(\)](#) and [request_registry_clear\(\)](#) - so you can run those two yourself to achieve the same thing

Value

nothing

See Also

[stub_registry_clear\(\)](#) [request_registry_clear\(\)](#)

Examples

```
# webmockr_reset()
```

wi_th	<i>Set additional parts of a stubbed request</i>
-------	--

Description

Set query params, request body, request headers and/or basic_auth

Usage

```
wi_th(.data, ..., .list = list())
```

Arguments

.data	input. Anything that can be coerced to a StubbedRequest class object
...	Comma separated list of named variables. accepts the following: query, body, headers, basic_auth. See Details.
.list	named list, has to be one of query, body, headers and/or basic_auth. An alternative to passing in via Don't pass the same thing to both, e.g. don't pass 'query' to ..., and also 'query' to this parameter

Details

with is a function in the base package, so we went with wi_th

Values for query, body, headers, and basic_auth:

- query: (list) a named list. values are coerced to character class in the recorded stub. You can pass numeric, integer, etc., but all will be coerced to character.
- body: various, including character string, list, raw, numeric, upload (`curl::upload()`, `http::upload_file()`, `curl::form_file()`, or `curl::form_data()` they both create the same object in the end). for the special case of an empty request body use NA instead of NULL because with NULL we can't determine if the user did not supply a body or they supplied NULL to indicate an empty body.
- headers: (list) a named list
- basic_auth: (character) a length two vector, username and password. We don't do any checking of the username/password except to detect edge cases where for example, the username/password were probably not set by the user on purpose (e.g., a URL is picked up by an environment variable). Only basic authentication supported https://en.wikipedia.org/wiki/Basic_access_authentication.

Note that there is no regex matching on query, body, or headers. They are tested for matches in the following ways:

- query: compare stubs and requests with `identical()`. this compares named lists, so both list names and values are compared
- body: varies depending on the body format (list vs. character, etc.)
- headers: compare stub and request values with `==`. list names are compared with `%in%`. basic_auth is included in headers (with the name Authorization)

Value

an object of class `StubbedRequest`, with `print` method describing the stub

Note

see more examples in [stub_request\(\)](#)

See Also

[including\(\)](#)

Examples

```
# first, make a stub object
req <- stub_request("post", "https://httpbin.org/post")

# add body
# list
wi_th(req, body = list(foo = "bar"))
# string
wi_th(req, body = '{"foo": "bar"}')
# raw
wi_th(req, body = charToRaw('{"foo": "bar"}'))
# numeric
wi_th(req, body = 5)
# an upload
wi_th(req, body = crul::upload(system.file("CITATION")))
# wi_th(req, body = httr::upload_file(system.file("CITATION")))

# add query - has to be a named list
wi_th(req, query = list(foo = "bar"))

# add headers - has to be a named list
wi_th(req, headers = list(foo = "bar"))
wi_th(req, headers = list(`User-Agent` = "webmockr/v1", hello = "world"))

# .list - pass in a named list instead
wi_th(req, .list = list(body = list(foo = "bar")))

# basic authentication
wi_th(req, basic_auth = c("user", "pass"))
wi_th(req, basic_auth = c("user", "pass"), headers = list(foo = "bar"))

# partial matching, query params
## including
wi_th(req, query = including(list(foo = "bar")))
## excluding
wi_th(req, query = excluding(list(foo = "bar")))

# partial matching, body
## including
wi_th(req, body = including(list(foo = "bar")))
```



```
## excluding
with(req, body = excluding(list(foo = "bar")))

# basic auth
## including
with(req, body = including(list(foo = "bar")))
## excluding
with(req, body = excluding(list(foo = "bar")))
```

Index

- * **request-registry**
 - HashCounter, 11
 - request_registry, 28
 - RequestRegistry, 24
- * **stub-registry**
 - remove_request_stub, 20
 - stub_registry, 43
 - stub_registry_clear, 44
 - StubRegistry, 39
- Adapter (CrulAdapter), 6
- BodyPattern, 22
- build_crul_request, 3
- build_crul_response, 3
- build_htr2_request, 4
- build_htr2_response, 4
- build_htr_request, 5
- build_htr_response, 6
- crul::upload(), 55
- CrulAdapter, 6, 12
- curl::form_data(), 55
- curl::form_file(), 55
- disable (enable), 10
- disable(), 52
- enable, 10
- enable(), 52
- enabled (enable), 10
- excluding (including), 14
- grepl, 45
- HashCounter, 11, 25, 29
- HeadersPattern, 22
- HttpLibAdapaterRegistry, 10, 12
- htr2_mock, 13
- Htr2Adapter (CrulAdapter), 6
- htr::upload_file(), 55
- htr_mock, 13
- HtrAdapter (CrulAdapter), 6
- including, 14
- including(), 56
- last_request, 15
- last_request(), 42
- last_stub, 16
- last_stub(), 42
- MethodPattern, 22
- mock_file, 19
- mock_file(), 46, 50
- mocking-disk-writing, 16, 45
- partial (including), 14
- pluck_body, 19
- remove_request_stub, 20, 41, 43, 44
- remove_request_stub(), 45
- request_registry, 11, 25, 28
- request_registry(), 51
- request_registry_clear
 - (request_registry), 28
- request_registry_clear(), 54
- RequestPattern, 21
- RequestRegistry, 11, 24, 29
- RequestSignature, 22, 26, 40
- Response, 29
- stub_body_diff, 41
- stub_body_diff(), 53
- stub_registry, 20, 41, 43, 44
- stub_registry(), 25, 45
- stub_registry_clear, 20, 41, 43, 44
- stub_registry_clear(), 45, 54
- stub_request, 44
- stub_request(), 33, 36, 45, 49, 51, 52, 56
- StubbedRequest, 33, 39–41, 45
- StubCounter, 38

StubRegistry, [20](#), [25](#), [39](#), [43](#), [44](#)

to_raise, [49](#)
to_raise(), [46](#), [50](#)
to_return, [50](#)
to_return(), [45](#), [46](#), [52](#)
to_return_, [52](#)
to_timeout, [51](#)
to_timeout(), [46](#), [50](#)

UriPattern, [22](#), [34](#), [44](#)

webmockr-defunct, [52](#)
webmockr::Adapter, [6](#), [7](#)
webmockr_allow_net_connect
 (webmockr_configure), [52](#)
webmockr_configuration
 (webmockr_configure), [52](#)
webmockr_configure, [52](#)
webmockr_configure(), [42](#)
webmockr_configure_reset
 (webmockr_configure), [52](#)
webmockr_disable(), [52](#)
webmockr_disable_net_connect
 (webmockr_configure), [52](#)
webmockr_enable(), [52](#)
webmockr_net_connect_allowed
 (webmockr_configure), [52](#)
webmockr_reset, [54](#)
webmockr_reset(), [51](#)
wi_th, [55](#)
wi_th(), [14](#), [45](#), [46](#), [52](#)
wi_th_, [52](#)