

# Package: webmockr (via r-universe)

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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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---

`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	<i>HashCounter</i>
-------------	--------------------

---

### 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(CurlAdapter$new())
x
x$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  
)
```

*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

*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)

## End(Not run)

```

---

RequestRegistry

*RequestRegistry*


---

### 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	<i>RequestSignature</i>
------------------	-------------------------

---

## 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	<i>StubbedRequest</i>
----------------	-----------------------

---

## 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 what's to be returned

**Method** `to_timeout()`: Response should time out

*Usage:*

```
StubbedRequest$to_timeout()
```

*Returns:* nothing returned

**Method** `to_raise(x)`: 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

Get a diff of a stub request body and a request body from an http request

### Usage

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

### Arguments

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

### Details

If either `stub` or `request` are `NULL`, this function will return an error message. You may not intentionally pass in a `NULL`, but the return value of `last_stub()` and `last_request()` when there's nothing found is `NULL`.

### Value

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

### 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	<i>List stubs in the stub registry</i>
---------------	--

---

## 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	<i>Stub an http request</i>
--------------	-----------------------------

---

## 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. <b>webmockr</b> can match uri's without the "http" scheme, but does not match if the scheme is "https". required, unless uri_regex given. See <a href="#">UriPattern</a> 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 `with()` 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") %>%
  with(query = mtcars)
#> Error in `with()`:
#> ! 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**

[with\(\)](#), [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") %>%
  with(headers = list("User-Agent" = "R"))

# request body
stub_request("post", "https://httpbin.org/post") %>%
  with(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") %>%
  with(
    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")
with(z, .list = list(query = list(foo = "bar")))

# just body
stub_request("any", uri_regex = ".+") %>%
  with(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 = ".+") %>% with(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(HTTPOUnauthorized)
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") %>%
  with(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") %>%
  with(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") %>%
  with(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") %>%
  with(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

*Set raise error condition*


---

## Description

Set raise error condition

## Usage

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

## Arguments

.data	input. Anything that can be coerced to a StubbedRequest class object
...	One or more HTTP exceptions from the <b>fauxpas</b> 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**

<code>.data</code>	input. Anything that can be coerced to a <code>StubbedRequest</code> class object
<code>...</code>	Comma separated list of named variables. accepts the following: <code>status</code> , <code>body</code> , <code>headers</code> . See Details for more.
<code>.list</code>	named list, has to be one of <code>'status'</code> , <code>'body'</code> , and/or <code>'headers'</code> . An alternative to passing in via <code>...</code> . Don't pass the same thing to both, e.g. don't pass <code>'status'</code> to <code>...</code> , and also <code>'status'</code> to this parameter
<code>times</code>	(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 `crul` 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)
```

---

**to\_timeout***Set timeout as an expected return on a match*

---

### 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

`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

*Set additional parts of a stubbed request*


---

**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. authentication type (basic/digest/ntlm/etc.) is ignored. that is, mocking authentication right now does not take into account the authentication type. 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)

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
```

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

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



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