

# Package ‘debugr’

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**Title** Debug Tool to Watch Objects/Expressions While Running an R Script

**Version** 0.0.1

**Maintainer** Joachim Zuckarelli <joachim@zuckarelli.de>

**Description** Tool to print out the value of R objects/expressions while running an R script. Outputs can be made dependent on user-defined conditions/criteria. Debug messages only appear when a global option for debugging is set. This way, 'debugr' code can even remain in the debugged code for later use without any negative effects during normal runtime.

**BugReports** <https://github.com/jsugarelli/debugr/issues>

**URL** <https://github.com/jsugarelli/debugr/>

**Depends** R (>= 3.5.0)

**License** GPL-3

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 6.0.1

**Imports** utils, rprojroot, rstudioapi

**Suggests** knitr, rmarkdown

**VignetteBuilder** knitr

**NeedsCompilation** no

**Author** Joachim Zuckarelli [aut, cre]

**Repository** CRAN

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debugmode

*Switching debug mode on and off*

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**Description**

The behavior of debugr's main function, `dwatch`, depends on whether or not the debugr *debug mode* is activated or not. The debug mode is turned on and off by setting the global option `debugr.active` to `TRUE` and `FALSE`, respectively. This can be accomplished with the `debugr_switchOn` and `debugr_switchOff` functions, or manually by running `options(debugr.active = TRUE)`.

**Usage**`debugr_switchOn()``debugr_switchOff()``debugr_isActive()`**Details**

When `debugr.active = TRUE` the debug mode is enabled and `dwatch` produces debugging outputs to the console (or to a file). In contrast, when the debug mode is disabled, `dwatch` remains "silent" and no output whatsoever will be shown.

**Functions**

- `debugr_switchOn`: Switches on the global option for debugging
- `debugr_switchOff`: Switches off the global option for debugging
- `debugr_isActive`: Check if debug mode is currently active or not

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dwatch*Printing debug outputs during runtime*

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**Description**

Prints a debug output to the console or to a file. A debug output can consist of a static text message, the values of one or more objects (potentially transformed by applying some functions) or the value of one or multiple (more complex) R expressions. Whether or not a debug message is displayed can be made dependent on the evaluation of a criterion phrased as an R expression. Generally, debug messages are only shown if the debug mode is activated. The debug mode is activated and deactivated with `debugr_switchOn` and `debugr_switchOff`, respectively, which change the logical `debugr.active` value in the global options. Since debug messages are only displayed in debug mode, the `dwatch` function calls can even remain in the original code as they remain silent and won't have any effect until the debug mode is switched on again.

## Usage

```
dwatch(crit = "", objs = NULL, funs = NULL, args = NULL,  
       show.all = FALSE, expr = NULL, msg = "", halt = FALSE,  
       unique.id = "", suppress.source = FALSE, show.frame = TRUE,  
       filename = "")
```

## Arguments

<code>crit</code>	An string containing an expression that determines if any debug outputs shall be displayed at all. Only, if <code>crit</code> evaluates to <code>TRUE</code> , a debug output will be shown.
<code>objs</code>	A vector of object names (as strings). The values of these objects will be displayed in the debug output.
<code>funs</code>	A vector of function names (as strings) that shall be applied to the objects in <code>objs</code> , one function per object. <code>funs</code> must have the same length as <code>objs</code> . If no function shall be applied to an object, the respective element in the <code>funs</code> vector must be <code>NULL</code> . The functions in <code>funs</code> must undertake the task of printing the object.
<code>args</code>	A list of vectors containing additional arguments for the functions in <code>funs</code> . It is assumed that the first argument of each function in <code>funs</code> is the respective object from <code>objs</code> . Additional arguments can then be supplied with <code>args</code> . The <code>args</code> list must have the same number of elements as <code>funs</code> . If a function does not receive any additional arguments, the respective element in the <code>args</code> list must be <code>NULL</code> . Each element of <code>args</code> is a vector of named elements. The element name is the name of the additions argument to the respective <code>funs</code> function, the elements value is the argument's value.
<code>show.all</code>	Prints all objects from the (calling) environment. If set to <code>TRUE</code> , <code>objs</code> is ignored and all objects in the environment (with the exception of functions) are included in the debug output.
<code>expr</code>	A vector of strings containing expressions to be evaluated and displayed in the debug output. This output comes on top of any <code>msg</code> or <code>objs</code> output.
<code>msg</code>	A string containing a general message to be displayed.
<code>halt</code>	If <code>TRUE</code> , the execution of the debugged R script is stopped after printing the output.
<code>unique.id</code>	A unique string ID that can be chosen by the user. This ID is displayed in the debug output and is used to identify the code section that contains the <code>dwatch</code> call. By default, when a debug output is displayed, <code>dwatch</code> tries to show an extract from the code that surrounds the <code>dwatch</code> call (this feature can be turned off by setting <code>suppress.source</code> to <code>TRUE</code> ).
<code>suppress.source</code>	If <code>TRUE</code> (default), <code>dwatch</code> tries to find the code section that includes the <code>dwatch</code> call and displays it as part of the debug output. Requires <code>unique.id</code> to be set.
<code>show.frame</code>	If <code>TRUE</code> (default), a frame is displayed at the top and the bottom of the debug output.
<code>filename</code>	If a filename is provided, all debug messages are only printed to the file and not shown on the R console.

**See Also**

debugr\_switchOn, debugr\_switchOff, debugr\_isActive

**Examples**

```
library(debugr)

# --- A simple example to print the value of an object
myfunction <- function(x) {
  justastring <- "Not much information here"
  z <- 1

  for(i in 1:x) {
    # This call can remain in your code; it is only activated when
    # the debug mode is switched on
    dwatch(crit = "z > 40000", objs = c("z"))
    z <- z * i
  }
  invisible(z)
}

# Turn debug mode on
debugr_switchOn()

# Call function for debugging
myfunction(10)

# --- Applying a function to the object that is printed
myfunction <- function(x) {
  justastring <- "Not much information here"
  z <- 1

  for(i in 1:x) {
    dwatch(crit = "z > 40000", objs = c("z"), funs=c("format"),
           args = as.list(c(big.mark = "\",\"")))
    z <- z * i
  }
  invisible(z)
}

myfunction(10)

# --- Same thing, this time with a expression
myfunction <- function(x) {
  justastring <- "Not much information here"
  z <- 1

  for(i in 1:x) {
```

```
      dwatch(crit = "z > 40000", expr=c("format(z, big.mark = \",\")"))
      z <- z * i
    }
    invisible(z)
  }

myfunction(10)
```

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