

# Package ‘IRkernel’

January 20, 2025

**Title** Native R Kernel for the 'Jupyter Notebook'

**Description** The R kernel for the 'Jupyter' environment executes R code which the front-end ('Jupyter Notebook' or other front-ends) submits to the kernel via the network.

**Version** 1.3.2

**URL** <https://irkernel.github.io>

**BugReports** <https://github.com/IRkernel/IRkernel/issues/>

**Depends** R (>= 3.2.0)

**Suggests** testthat, roxygen2

**SystemRequirements** jupyter, jupyter\_kernel\_test (Python package for testing)

**License** MIT + file LICENSE

**Encoding** UTF-8

**Imports** repr (>= 0.4.99), methods, evaluate (>= 0.10), IRdisplay (>= 0.3.0.9999), pbdZMQ (>= 0.2-1), crayon, jsonlite (>= 0.9.6), uuid, digest

**Collate** 'class\_unions.r' 'logging.r' 'comm\_manager.r' 'compat.r' 'completion.r' 'environment\_runtime.r' 'environment\_shadow.r' 'options.r' 'execution.r' 'handlers.r' 'help.r' 'installspec.r' 'utils.r' 'kernel.r' 'main.r' 'onload.r'

**RoxygenNote** 7.2.3

**NeedsCompilation** no

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**Repository** CRAN

**Date/Publication** 2023-01-20 20:20:02 UTC

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Comm-class	<i>The Comm</i>
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### Description

Has methods able to register and handle message callbacks

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CommManager-class	<i>The CommManager</i>
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### Description

Has methods able to register comms/targets and process comm messages

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comm_manager	<i>Get global CommManager instance</i>
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### Description

Get global CommManager instance

### Usage

comm\_manager()

### Value

[CommManager](#) instance if a kernel is running, else NULL

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installspec	<i>Install the kernelspec to tell Jupyter about IRkernel.</i>
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### Description

This can be called multiple times for different R interpreter, but you have to give a different name (and displayname to see a difference in the notebook UI). If the same name is give, it will overwrite older versions of the kernel spec with that name!

### Usage

```
installspec(  
  user = NULL,  
  name = "ir",  
  displayname = "R",  
  rprofile = NULL,  
  prefix = NULL,  
  sys_prefix = NULL,  
  verbose = getOption("verbose")  
)
```

### Arguments

user	Install into user directory ( <code>\$XDG_DATA_HOME/jupyter/kernels</code> ) or globally? (default: NULL but treated as TRUE if "prefix" is not specified)
name	The name of the kernel (default "ir")
displayname	The name which is displayed in the notebook (default: "R")
rprofile	(optional) Path to kernel-specific Rprofile (defaults to system-level settings)
prefix	(optional) Path to alternate directory to install kernelspec into (default: NULL)
sys_prefix	(optional) Install kernelspec using the <code>--sys-prefix</code> option of the currently detected jupyter (default: NULL)
verbose	(optional) If FALSE, silence output of install

### Value

Exit code of the jupyter kernelspec install call.

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jupyter\_option\_defaults

*An R kernel for Jupyter.*

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## Description

Jupyter speaks a JSON+ZMQ protocol to a 'kernel' which is responsible for executing code. This package is a kernel for the R language.

## Usage

```
jupyter_option_defaults
```

## Format

An object of class `list` of length 7.

## Options

The following can be set/read via `options(opt.name = ...) /getOption('opt.name')`

`jupyter.log_level` 1L (errors), 2L (warnings), or 3L (debug). 1L is the default.

`jupyter.pager_classes` Classes to use the pager for instead of displaying them inline. Default: `help` `pages`

`jupyter.in_kernel` TRUE if this code is executed in a running kernel. Set to pretend being/not being in a kernel

`jupyter.rich_display` Use more than just text display

`jupyter.display_mimetypes` The formats emitted when any return value is to be displayed (default: all mimetypes listed [here](#))

`jupyter.plot_mimetypes` The plot formats emitted to the frontend when a plot is displayed. (default: `image/png` and `application/pdf`)

`jupyter.plot_scale` The ratio (notebook PPI / `repr.plot.res`). E.g.: With the defaults `repr.plot.res=120` px/in (PPI) and `jupyter.plot_scale=2`, a `1in×1in` image will be displayed as a `0.5in×0.5in`, 240 PPI image. (default: 2, fit for retina displays)

## See Also

[installspec](#)

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log	<i>Kernel logging functions</i>
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**Description**

A set of exported logging utilities that have the capability to be used in upstream projects. Log level and log file can be set via R package options e.g. `options(jupyter.log_level = 2L)` or from the environment variables `JUPYTER_LOG_LEVEL` and `JUPYTER_LOGFILE`.

**Usage**

```
log_debug(...)
```

```
log_info(...)
```

```
log_error(...)
```

**Arguments**

```
...          message to log
```

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main	<i>Initialise and run the kernel</i>
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**Description**

Initialise and run the kernel

**Usage**

```
main(connection_file = "")
```

**Arguments**

```
connection_file  
The path to the Jupyter connection file, written by the frontend
```

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