# Package: IRkernel (via r-universe)

October 16, 2026

**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** 1.3.2.9000

**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

**Config/pak/sysreqs** python3 libzmq3-dev

**Repository** https://irkernel.r-universe.dev

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**RemoteUrl** https://github.com/irkernel/irkernel

**RemoteRef** HEAD

**RemoteSha** 124f2347f15cfadeabc6738868e05e6087f4c456

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`Comm-class` *The Comm*

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## Description

Has methods able to register and handle message callbacks

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`comm_manager` *Get global CommManager instance*

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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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`CommManager-class` *The CommManager*

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## Description

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

`installspec` *Install the kernelspec to tell Jupyter about IRkernel.*

## 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"),
  env = NULL
)
```

## Arguments

| | |
|---|---|
| `user` | Install into user directory (`$XDG_DATA_HOME/jupyter/kernels`) 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 `--sys-prefix` option of the currently detected jupyter (default: NULL) |
| `verbose` | (optional) If `FALSE`, silence output of `install` |
| `env` | (optional) Named list of environment variables to set in the kernel (default: NULL) |

## Value

Exit code of the `jupyter kernelspec install` call.

`jupyter_option_defaults` *An R kernel for Jupyter.*

## 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

## log *Kernel logging functions*

### 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 |

## main *Initialise and run the kernel*

### 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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