Package 'sakura'

March 3, 2025

Type Package

Title Extension to R Serialization

Version 0.1.0

Description Extends the functionality of R serialization by augmenting the built-in reference hook system. This enhanced implementation allows optimal, one-pass integrated serialization that combines R serialization with third-party serialization methods. Facilitates the serialization of even complex R objects, which contain non-system reference objects, such as those accessed via external pointers, for use in parallel and distributed computing.

License GPL (>= 3)

BugReports https://github.com/shikokuchuo/sakura/issues

URL https://shikokuchuo.net/sakura/,
https://github.com/shikokuchuo/sakura/

Encoding UTF-8

Depends R (>= 3.5)

Suggests arrow

RoxygenNote 7.3.2

Config/build/compilation-database true

NeedsCompilation yes

Author Charlie Gao [aut, cre] (<https://orcid.org/0000-0002-0750-061X>),
Hibiki AI Limited [cph]

Maintainer Charlie Gao <charlie.gao@shikokuchuo.net>

Repository CRAN

Date/Publication 2025-03-03 11:40:02 UTC

Contents

---

sakura-package *sakura: Extension to R Serialization*

Description

Exposes the 'refhook' functionality of R serialization for alternative serialization of non-system reference objects.

Author(s)

Charlie Gao <charlie.gao@shikokuchuo.net> ([ORCID](#))

See Also

Useful links:

- <https://shikokuchuo.net/sakura/>
- <https://github.com/shikokuchuo/sakura/>
- Report bugs at <https://github.com/shikokuchuo/sakura/issues>

---

serialize *Serialize*

Description

An extension of R native serialization using the 'refhook' system for custom serialization and unserialization of non-system reference objects.

Usage

```
serialize(x, hook = NULL)

unserialize(x, hook = NULL)
```

Arguments

x	an object.
hook	[default NULL] optionally, a configuration returned by `serial_config`.

Value

For serialize: a raw vector. For unserialize: the unserialized object.

Examples

```
vec <- serialize(data.frame())
vec
unserialize(vec)


obj <- list(arrow::as_arrow_table(iris), arrow::as_arrow_table(mtcars))
cfg <- serial_config(
  "ArrowTabular",
  arrow::write_to_raw,
  function(x) arrow::read_ipc_stream(x, as_data_frame = FALSE)
)
raw <- serialize(obj, cfg)
unserialize(raw, cfg)
```

---

serial_config   *Create Serialization Configuration*

Description

Returns a serialization configuration for custom serialization and unserialization of non-system reference objects, using the 'refhook' system of R native serialization. This allows their use across different R sessions.

Usage

```
serial_config(class, sfunc, ufunc, vec = FALSE)
```

Arguments

class	character string of the class of object custom serialization functions are applied to, e.g. 'ArrowTabular' or 'torch_tensor'.
sfunc	a function that accepts a reference object inheriting from 'class' (or a list of such objects) and returns a raw vector.
ufunc	a function that accepts a raw vector and returns a reference object (or list of such objects).
vec	[default FALSE] whether or not the serialization functions are vectorized. If FALSE, they should accept and return reference objects individually e.g. `arrow::write_to_raw` and `arrow::read_ipc_stream`. If TRUE, they should accept and return a list of reference objects, e.g. `torch::torch_serialize` and `torch::torch_load`.

Value

A pairlist comprising the configuration. This may be provided to the 'hook' argument of [serialize](#) and [unserialize](#).

Examples

```
serial_config("test_class", base::serialize, base::unserialize)
```

Index