Package 'adbi'

July 22, 2025

Title 'DBI' Compliant Database Access Using 'ADBC'

Version 0.1.1

Description In order to make Arrow Database Connectivity ('ADBC' <https://arrow.apache.org/adbc/>) accessible from R, an interface compliant with the 'DBI' package is provided, using driver back-ends that are implemented in the 'adbc-drivermanager' framework. This enables interacting with database systems using the Arrow data format, thereby offering an efficient alternative to 'ODBC' for analytical applications.

License LGPL (>= 2.1)

URL <https://adbi.r-dbi.org>, <https://github.com/r-dbi/adbi>, <https://arrow.apache.org/adbc/>

BugReports <https://github.com/r-dbi/adbi/issues>

Depends R (>= 3.6.0)

Imports DBI (>= 1.2.0), methods, adbcdrivermanager (>= 0.8.0), nanoarrow (>= 0.3.0)

Suggests testthat, covr, DBItest (>= 1.8.0), adbcsqlite (>= 0.8.0), withr, bit64, utils, arrow

Config/Needs/website r-dbi/dbitemplate

Encoding UTF-8

RoxygenNote 7.3.1

Config/autostyle/scope line_breaks

Config/autostyle/strict false

Collate 'adbi-package.R' 'AdbiDriver.R' 'AdbiConnection.R'
'AdbiResult.R' 'AdbiResultArrow.R'
'dbAppendTable_AdbiConnection_character_data.frame.R'
'dbBegin_AdbiConnection.R' 'dbBindArrow_AdbiResult.R'
'dbBindArrow_AdbiResultArrow.R' 'dbBind_AdbiResult.R'
'dbBind_AdbiResultArrow.R' 'dbClearResult_AdbiResult.R'
'dbClearResult_AdbiResultArrow.R' 'dbColumnInfo_AdbiResult.R'
'dbColumnInfo_AdbiResultArrow.R' 'dbCommit_AdbiConnection.R'
'dbConnect_AdbiDriver.R' 'dbDataType_AdbiConnection.R'
'dbDataType_AdbiDriver.R' 'dbDisconnect_AdbiConnection.R'

1

'dbExistsTable_AdbiConnection_Id.R'
'dbExistsTable_AdbiConnection_SQL.R'
'dbExistsTable_AdbiConnection_character.R'
'dbFetchArrowChunk_AdbiResultArrow.R'
'dbFetchArrow_AdbiResultArrow.R' 'dbFetch_AdbiResult.R'
'dbGetInfo_AdbiConnection.R' 'dbGetInfo_AdbiDriver.R'
'dbGetRowCount_AdbiResult.R' 'dbGetRowCount_AdbiResultArrow.R'
'dbGetRowsAffected_AdbiResult.R'
'dbGetRowsAffected_AdbiResultArrow.R'
'dbGetStatement_AdbiResult.R'
'dbGetStatement_AdbiResultArrow.R'
'dbHasCompleted_AdbiResult.R'
'dbHasCompleted_AdbiResultArrow.R' 'dbIsValid_AdbiConnection.R'
'dbIsValid_AdbiDriver.R' 'dbIsValid_AdbiResult.R'
'dbIsValid_AdbiResultArrow.R'
'dbListFields_AdbiConnection_Id.R'
'dbListFields_AdbiConnection_SQL.R'
'dbListFields_AdbiConnection_character.R'
'dbListTables_AdbiConnection.R'
'dbQuoteIdentifier_AdbiConnection_character.R'
'dbQuoteLiteral_AdbiConnection_character.R'
'dbQuoteString_AdbiConnection_character.R'
'dbRemoveTable_AdbiConnection_character.R'
'dbRemoveTable_AdbiConnection_Id.R'
'dbRollback_AdbiConnection.R'
'dbSendQueryArrow_AdbiConnection.R'
'dbSendQuery_AdbiConnection_character.R'
'dbSendStatement_AdbiConnection_character.R'
'dbUnquoteIdentifier_AdbiConnection.R'
'dbWriteTable_AdbiConnection_Id_data.frame.R'
'dbWriteTable_AdbiConnection_SQL_data.frame.R'
'dbWriteTable_AdbiConnection_character_data.frame.R' 'export.R'
'nanoarrow.R' 'show_AdbiConnection.R' 'show_AdbiDriver.R'
'show_AdbiResult.R' 'show_AdbiResultArrow.R' 'utils.R'

NeedsCompilation no

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Repository CRAN

Date/Publication 2024-01-25 17:10:05 UTC

Contents

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adbi	*Adbi driver*

Description

In order to open a database connection, [DBI::dbConnect()](#) dispatches on a driver object, which can be instantiated by calling adbi().

Usage

```
adbi(driver = NA_character_)

## S4 method for signature 'AdbiDriver'
dbConnect(drv, ..., bigint = NULL)

## S4 method for signature 'AdbiConnection'
dbDisconnect(conn, force = getOption("adbi.force_close_results", FALSE), ...)
```

Arguments

driver	A driver specification that can be evaluated (with no arguments) to give an [adbcdrivermanager::adbc_driver()](#). See Details for more information.
drv	an object that inherits from [DBIDriver](#), or an existing [DBIConnection](#) object (in order to clone an existing connection).
...	Extra arguments passed to [dbConnect()](#) are forwarded to [adbcdrivermanager::adbc_database_init()](#)
bigint	The R type that 64-bit integer types should be mapped to, default is [bit64::integer64](#), if bit64 is installed and character otherwise
conn	A [DBIConnection](#) object, as returned by [dbConnect()](#).
force	Close open results when disconnecting

Details

To specify the type of adbc driver, adbi accepts as driver argument

- an object inheriting from adbc_driver,
- a function that can be evaluated with no arguments and returns an object inheriting from adbc_driver,
- a string of the form pkg::fun (where pkg:: is optional and defaults to fun), which can be used to look up such a function.

As default, an [adbcdrivermanager::adbc_driver_monkey()](#) object is created.

Value

A connection object (S4 class AdbiCOnnection, inheriting from [DBIConnection](#)) is returned by [dbConnect()](#), while [dbDisconnect()](#) returns TRUE invisibly.

Examples

```
adbi()
if (requireNamespace("adbcsqlite")) {
  adbi("adbcsqlite")
}
library(DBI)
con <- dbConnect(adbi())
dbIsValid(con)
dbDisconnect(con)
dbIsValid(con)
```

---

dbFetch_AdbiResult   *Fetch result sets*

Description

When fetching results using [dbFetch()](#), the argument n can be specified to control chunk size per
fetching operation. The default value of -1 corresponds to retrieving the entire result set at once,
while a positive integer will try returning as many rows (as long as n does not exceed the available
number of rows), in line with standard DBI expectations. As data transfer is mediated by Arrow data
structures, which are retrieved as array chunks, the underlying chunk size can be used by passing
an n value NA.

Usage

```
## S4 method for signature 'AdbiResult'
dbFetch(res, n = -1, ...)
```

Arguments

res	An object inheriting from [DBIResult](#), created by [dbSendQuery()](#).
n	maximum number of records to retrieve per fetch. Use n = -1 or n = Inf to retrieve all pending records. Some implementations may recognize other special values.
...	Other arguments passed on to methods.

Value

A data.frame with the requested number of rows (or zero rows if [dbFetch()](#) is called on a result
set with no more remaining rows).

Examples

```
if (requireNamespace("adbcsqlite")) {
  library(DBI)
  con <- dbConnect(adbi::adbi("adbcsqlite"), uri = ":memory:")
  dbWriteTable(con, "swiss", swiss)
  res <- dbSendQuery(con, "SELECT * from swiss WHERE Agriculture < 30")
```

```
    dbFetch(res)
    dbClearResult(res)
    dbDisconnect(con)
  }
```

```
dbSendQueryArrow_AdbiConnection
```
Create result sets

Description

Creating result sets using [dbSendQuery()](#) (and by extension using [dbGetQuery()](#)) mostly follows DBI specification. One way where adbi deviates from DBI mechanisms is how the `bigint` setting is not only per connection, but the per-connection setting can be overridden on a result set basis. As default, the connection setting is applied, but passing one of the accepted values as `bigint` when creating a result set will subsequently use that setting for all fetches using this result set.

Usage

```
## S4 method for signature 'AdbiConnection'
dbSendQueryArrow(
  conn,
  statement,
  ...,
  params = NULL,
  immediate = NULL,
  bigint = NULL
)

## S4 method for signature 'AdbiConnection,character'
dbSendQuery(
  conn,
  statement,
  ...,
  params = NULL,
  immediate = NULL,
  bigint = NULL
)

## S4 method for signature 'AdbiConnection,character'
dbSendStatement(
  conn,
  statement,
  ...,
  params = NULL,
  immediate = NULL,
  bigint = NULL
)
```

Arguments

`conn`	A [DBIConnection](#) object, as returned by [dbConnect()](#).
`statement`	a character string containing SQL.
`...`	Other parameters passed on to methods.
`params`	Optional query parameters (forwarded to [dbBind()](#))
`immediate`	Passing a value TRUE is intended for statements containing no placeholders and FALSE otherwise. The default value NULL will inspect the statement for presence of placeholders (will PREPARE the statement)
`bigint`	The R type that 64-bit integer types should be mapped to, default is chosen according to the connection setting

Details

Multiple open result sets per connection are supported and support can be disabled by setting `options(adbi.allow_multiple_results = FALSE)`. If not enabled, creating a new result will finalize potential other results and throw a warning.

Value

An S4 class `AdbiResult` (inheriting from [DBIResult](#)).

See Also

adbi-driver

Examples

```
if (requireNamespace("adbcsqlite")) {
  library(DBI)
  con <- dbConnect(adbi::adbi("adbcsqlite"), uri = ":memory:")
  dbWriteTable(con, "swiss", swiss)
  str(
    dbGetQuery(con, "SELECT Examination from swiss WHERE Agriculture < 30")
  )
  str(
    dbGetQuery(con, "SELECT Examination from swiss WHERE Agriculture < 30",
      bigint = "integer")
  )
  dbDisconnect(con)
}
```

Index