

Package ‘srcr’

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Type Package

Title Simplify Connections to Database Sources

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Description Connecting to databases requires boilerplate code to specify connection parameters and to set up sessions properly with the DBMS. This package provides a simple tool to fill two purposes: abstracting connection details, including secret credentials, out of your source code and managing configuration for frequently-used database connections in a persistent and flexible way, while minimizing requirements on the runtime environment.

License Artistic-2.0

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find_config_files *Locate candidate configuration files*

Description

Given vectors of directories, basenames, and suffices, combine them to find existing files.

Usage

```
find_config_files(  
  basenames = .basename.defaults(),  
  dirs = .dir.defaults(),  
  suffices = .suffix.defaults()  
)
```

Arguments

basenames A vector of file names to use in searching for configuration files.
dirs A vector of directory names to use in searching for configuration files.
suffices A vector of suffices (file "type"s) to use in searching for the configuration file.

Details

This function is intended to support a variety of installation patterns, so it attempts to be flexible in looking for configuration files. First, environment variables of the form *basename_CONFIG*, where *basename* is the uppercase form of each candidate basename, are examined to see whether any translate to a file path.

Following this, the path name parts supplied as arguments are used to build potential file names. If *dirs* is not specified, the following directories are checked by default:

1. the user's \$HOME directory
2. the directory in which the executing script is located
3. the directory in which the calling function's source file is located (typically an application-level library) For example, if the function `my_setup()` calls `srcr()`, which in turn calls `find_config_files()`, then the directory of the file containing `my_setup()` will be tried.
4. the directory in which the calling function's source file is located (typically a utility function, such as `srcr()`)

Note that the current working directory is not part of the search by default. This is done to limit the potential for accidentally introducing (potentially harmful) configuration files by setting the working directory.

In each location, the file names given in *basenames* are checked; if none are specified, several default file names are tried:

1. the name of the calling function's source file

2. the name of the executing script
3. the directory in which the calling function's calling function's source file is located (typically an application-level library). For example, if the function `my_setup()` calls `srcr()`, which in turn calls `find_config_files()`, then the name of the file containing `my_setup()` will be tried.

The suffices (file "type"s) of `.json`, `.conf`, and `nothing`, are tried with each candidate path; you may override this default by using `th3_suffices` parameter. Finally, in order to accommodate the Unix tradition of "hidden" configuration files, each basename is prefixed with a period before trying the basename alone.

Value

A vector of path specifications, or an empty vector if none are found.

Examples

```
## Not run:
find_config_files() # All defaults
find_config_files(dirs = c(file.path(Sys.getenv('HOME'),'etc'),
                             '/usr/local/etc', '/etc'),
                  basenames = c('my_app'),
                  suffices = c('.conf', '.rc'))

## End(Not run)
```

srcr

Connect to database using config file

Description

Set up a or DBI or legacy dplyr database connection using information from a JSON configuration file, and return the connection.

Connecting to databases requires boilerplate code to specify connection parameters and to set up sessions properly with the DBMS. This package provides a simple tool to fill two purposes: abstracting connection details, including secret credentials, out of your source code and managing configuration for frequently-used database connections in a persistent and flexible way, while minimizing requirements on the runtime environment.

Usage

```
srcr(
  basenames = NA,
  dirs = NA,
  suffices = NA,
  paths = NA,
  config = NA,
  allow_post_connect = getOption("srcr.allow_post_connect", c())
)
```

Arguments

<code>basenames</code>	A vector of file names to use in searching for configuration files.
<code>dirs</code>	A vector of directory names to use in searching for configuration files.
<code>suffices</code>	A vector of suffices (file "type"s) to use in searching for the configuration file.
<code>paths</code>	A vector of full path names for the configuration file. If present, only these paths are checked; <code>find_config_files()</code> is not called.
<code>config</code>	A list containing the configuration data, to be used instead of reading a configuration file, should you wish to skip that step.
<code>allow_post_connect</code>	A vector specifying what session setup you will permit after the connection is established. If any element of the vector is <code>sql</code> , then the <code>post_connect_sql</code> section of the configuration file is executed. Similarly, if any element is <code>fun</code> , then the <code>post_connect_fun</code> section of the config file is executed (after <code>post_connect_sql</code> , if both are present and allowed).

Details

The configuration file must provide all of the information necessary to set up the DBI connection or dplyr src. Given the variety of ways a data source can be specified, the JSON must be a hash containing at least two elements:

- The `src_name` key points to a string containing name of a DBI driver method (e.g. `SQLite`), as one might pass to `DBI::dbDriver()`, or a dplyr function that sets up the data source (e.g. `dplyr::src_postgres()`). If the value associated with `src_name` begins with `'src_'`, it is taken as the latter, otherwise it is taken as the former. In this case, an attempt will be made to load the appropriate DBI-compliant database library (e.g. `RSQLite` for the above example) if it hasn't already been loaded.
- The `src_args` key points to a nested hash, whose keys are the arguments to that function, and whose values are the argument values.

To locate the necessary configuration file, you can use all of the arguments taken by `find_config_files()`, but remember that the contents of the file must be JSON, regardless of the file's name. Alternatively, if `paths` is present, only the specified paths are checked. The first file that exists, is readable, and evaluates as legal JSON is used as the source of configuration data.

If your deployment strategy does not make use of configuration files (e.g. you access configuration data via a web service or similar API), you may also pass a list containing the configuration data directly via the `config` parameter. In this case, no configuration files are used.

Once the connection is established, the `post_connect_sql` and `post_connect_fun` elements of the configuration data can be used to perform additional processing to set session characteristics, roles, etc. However, because this entails the configuration file providing code that you won't see prior to runtime, you need to opt in to these features. You can make this choice globally by setting the `srcr.allow_post_connect` option via `base::options()`.

Value

A database connection. The specific class of the object is determined by the `src_name` in the configuration data.

Examples

```
## Not run:
# Search all the (filename-based) defaults
srcr()

# "The usual"
srcr('myproj_prod')

# Look around
srcr( dirs = c(Sys.getenv('PROJ_CONF_DIR'), 'var/lib', getwd()),
      basenames = c('myproj', Sys.getenv('PROJ_NAME')) )

# No defaults
srcr(paths = c('/path/to/known/config.json'))
srcr(config =
      list(src_name = 'Postgres',
           src_args = list(host = 'my.host', dbname = 'my_db', user = 'me'),
           post_connect_sql = 'set role project_role;'))

## End(Not run)
```

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