Package: shinytest (via r-universe)

October 21, 2026

Title Test Shiny Apps

Version 1.6.0

Description Please see the shinytest to shinytest2 migration guide at <https://rstudio.github.io/shinytest2/articles/z-migration.html>.

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URL https://github.com/rstudio/shinytest

BugReports https://github.com/rstudio/shinytest/issues

Imports assertthat, callr (>= 2.0.3), crayon, debugme, digest, htmlwidgets, httpuv, httr, jsonlite, parsedate, pingr, R6, rematch, rlang, rstudioapi (>= 0.8.0.9002), shiny (>= 1.3.2), testthat (>= 1.0.0), utils, webdriver (>= 1.0.6), withr

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`dependenciesInstalled` *Checks for/installs dependencies*

Description

`dependenciesInstalled()` that all the required system dependency, PhantomJS, is installed, and `installDependencies()` installs it if needed. For more information about where PhantomJS will be installed see `webdriver::install_phantomjs()`.

Usage

```
dependenciesInstalled()

installDependencies()
```

Value

`TRUE` when all dependencies are fulfilled; otherwise, `FALSE`.

`expect_pass` *Expectation:* `testApp()` *passes snapshot tests*

Description

This returns an testthat expectation object.

Usage

```
expect_pass(object, info = NULL)
```

Arguments

`object`	The results returned by `testApp()`.
`info`	Extra information to be included in the message (useful when writing tests in loops).

Examples

```
## Not run:
expect_pass(testApp("path/to/app/"))

## End(Not run)
```

migrateShinytestDir *Migrate legacy* **shinytest** *files to new test directory structure*

Description

This function migrates the old-style directory structure used by **shinytest** (versions 1.3.1 and below) to new test directory structure used in shinytest 1.4.0 and above.

Usage

```
migrateShinytestDir(appdir, dryrun = FALSE)
```

Arguments

appdir	A directory containing a Shiny application.
dryrun	If TRUE, print out the changes that would be made, but don't actually do them.

Details

Before **shinytest** 1.4.0, the shinytest scripts and results were put in a subdirectory of the application named tests/. As of **shinytest** 1.4.0, the tests are put in tests/shinytest/, so that it works with the runTests() function shiny package (added in **shiny** 1.5.0).

With **shinytest** 1.3.1 and below, the tests/ subdirectory of the application was used specifically for **shinytest**, and could not be used for other types of tests. So the directory structure would look like this:

```
appdir/
 `- tests
     `- mytest.R
```

In Shiny 1.5.0, the shiny::runTests() function was added, and it will run test scripts tests/ subdirectory of the application. This makes it possible to use other testing systems in addition to shinytest. **shinytest** 1.4.0 is designed to work with this new directory structure. The directory structure looks something like this:

```
appdir/
 |- R
 |- tests
     |- shinytest.R
     |- shinytest
     |   `- mytest.R
     |- testthat.R
     `- testthat
         `- test-script.R
```

This allows for tests using the **shinytest** package as well as other testing tools, such as the `shiny::testServer()` function, which can be used for testing module and server logic, and for unit tests of functions in an R/ subdirectory.

In **shinytest** 1.4.0 and above, it defaults to creating the new directory structure.

`osName` *Get the name of the OS*

Description

Returns the name of the current OS. This can be useful for the `suffix` when running `testApp()`.

Usage

```
osName()
```

`recordTest` *Launch test event recorder for a Shiny app*

Description

Launch test event recorder for a Shiny app

Usage

```
recordTest(
  app = ".",
  save_dir = NULL,
  load_mode = FALSE,
  seed = NULL,
  loadTimeout = 10000,
  debug = "shiny_console",
  shinyOptions = list()
)
```

Arguments

`app`	A `ShinyDriver()` object, or path to a Shiny application.
`save_dir`	A directory to save stuff.
`load_mode`	A boolean that determines whether or not the resulting test script should be appropriate for load testing.
`seed`	A random seed to set before running the app. This seed will also be used in the test script.

loadTimeout	Maximum time to wait for the Shiny application to load, in milliseconds. If a value is provided, it will be saved in the test script.
debug	start the underlying ShinyDriver() in debug mode and print those debug logs to the R console once recording is finished. The default, 'shiny_console', captures and prints R console output from the recorded R shiny process. Any value that the debug argument in ShinyDriver() accepts may be used (e.g., 'none' may be used to completely suppress the driver logs).
shinyOptions	A list of options to pass to runApp(). If a value is provided, it will be saved in the test script.

ShinyDriver *Remote control a Shiny app running in a headless browser*

Description

This class starts a Shiny app in a new R session, along with a phantom.js headless browser that can be used to simulate user actions. This provides a full simulation of a Shiny app so that you can test user interactions with a live app.

Methods

Public methods:

- ShinyDriver$new()
- ShinyDriver$finalize()
- ShinyDriver$stop()
- ShinyDriver$getValue()
- ShinyDriver$setValue()
- ShinyDriver$click()
- ShinyDriver$getAllValues()
- ShinyDriver$sendKeys()
- ShinyDriver$setWindowSize()
- ShinyDriver$getWindowSize()
- ShinyDriver$getDebugLog()
- ShinyDriver$enableDebugLogMessages()
- ShinyDriver$logEvent()
- ShinyDriver$getEventLog()
- ShinyDriver$getUrl()
- ShinyDriver$getTitle()
- ShinyDriver$getSource()
- ShinyDriver$goBack()
- ShinyDriver$refresh()
- ShinyDriver$takeScreenshot()
- ShinyDriver$findElement()

- ShinyDriver$findElements()
- ShinyDriver$waitFor()
- ShinyDriver$waitForShiny()
- ShinyDriver$waitForValue()
- ShinyDriver$listWidgets()
- ShinyDriver$checkUniqueWidgetNames()
- ShinyDriver$executeScript()
- ShinyDriver$executeScriptAsync()
- ShinyDriver$findWidget()
- ShinyDriver$expectUpdate()
- ShinyDriver$setInputs()
- ShinyDriver$uploadFile()
- ShinyDriver$snapshotInit()
- ShinyDriver$snapshot()
- ShinyDriver$snapshotCompare()
- ShinyDriver$snapshotDownload()
- ShinyDriver$getAppDir()
- ShinyDriver$getAppFilename()
- ShinyDriver$getTestsDir()
- ShinyDriver$getRelativePathToApp()
- ShinyDriver$getSnapshotDir()
- ShinyDriver$isRmd()
- ShinyDriver$clone()

Method `new()`**:**

Usage:

```
ShinyDriver$new(
  path = ".",
  loadTimeout = NULL,
  checkNames = TRUE,
  debug = c("none", "all", shinytest::ShinyDriver$debugLogTypes),
  phantomTimeout = 5000,
  seed = NULL,
  cleanLogs = TRUE,
  shinyOptions = list(),
  renderArgs = NULL,
  options = list()
)
```

Arguments:

`path` Path to a directory containing a Shiny app, i.e. a single `app.R` file or a `server.R-ui.R` pair.

`loadTimeout` How long to wait for the app to load, in ms. This includes the time to start R. Defaults to 5s when running locally and 10s when running on CI.

`checkNames` Check if widget names are unique?

debug Start the app in debugging mode? In debugging mode debug messages are printed to the console.

phantomTimeout How long to wait when connecting to phantomJS process, in ms

seed An optional random seed to use before starting the application. For apps that use R's random number generator, this can make their behavior repeatable.

cleanLogs Whether to remove the stdout and stderr logs when the Shiny process object is garbage collected.

shinyOptions A list of options to pass to `shiny::runApp()`.

renderArgs Passed to `rmarkdown::run()` for interactive `.Rmd`s.

options A list of `base::options()` to set in the driver's child process.

Method `finalize()`**:** Stop app and clean up logs.

Usage:

```
ShinyDriver$finalize()
```

Method `stop()`**:** Stop the app, the terminate external R process that runs the app and the phantomjs instance.

Usage:

```
ShinyDriver$stop()
```

Method `getValue()`**:** Finds a widget and queries its value. See the `getValue()` method of Widget for more details.

Usage:

```
ShinyDriver$getValue(name, iotype = c("auto", "input", "output"))
```

Arguments:

name Name of a shiny widget.

iotype Type of the Shiny widget. Usually shinytest finds the widgets by their name, so this is only needed if you use the same name for an input and output widget.

Method `setValue()`**:** Finds a widget and sets its value. It's a shortcut for `findElement()` plus `setValue()`; see the Widget documentation for more details.

Usage:

```
ShinyDriver$setValue(name, value, iotype = c("auto", "input", "output"))
```

Arguments:

name Name of a shiny widget.

value New value.

iotype Type of the Shiny widget. Usually shinytest finds the widgets by their name, so this is only needed if you use the same name for an input and output widget.

Returns: Self, invisibly.

Method `click()`**:** Find a widget and click it. It's a shortcut for `findElement()` plus `click()`; see the Widget documentation for more details.

Usage:

```
ShinyDriver$click(name, iotype = c("auto", "input", "output"))
```

Arguments:

`name` Name of a shiny widget.

`iotype` Type of the Shiny widget. Usually shinytest finds the widgets by their name, so this is only needed if you use the same name for an input and output widget.

Method `getAllValues()`**:** Returns a named list of all inputs, outputs, and export values.

Usage:

```
ShinyDriver$getAllValues(input = TRUE, output = TRUE, export = TRUE)
```

Arguments:

`input, output, export` Either `TRUE` to return all input/output/exported values, or a character vector of specific controls.

Method `sendKeys()`**:** Sends the specified keys to specific HTML element. Shortcut for `findWidget()` plus `sendKeys()`.

Usage:

```
ShinyDriver$sendKeys(name, keys)
```

Arguments:

`name` Name of a shiny widget.

`keys` Keys to send to the widget or the app. See webdriver::key for how to specific special keys.

Returns: Self, invisibly.

Method `setWindowSize()`**:** Sets size of the browser window.

Usage:

```
ShinyDriver$setWindowSize(width, height)
```

Arguments:

`width, height` Height and width of browser, in pixels.

Returns: Self, invisibly.

Method `getWindowSize()`**:** Get current size of the browser window, as list of integer scalars named `width` and `height`.

Usage:

```
ShinyDriver$getWindowSize()
```

Method `getDebugLog()`**:** Query one or more of the debug logs.

Usage:

```
ShinyDriver$getDebugLog(type = c("all", ShinyDriver$debugLogTypes))
```

Arguments:

`type` Log type: `"all"`, `"shiny_console"`, `"browser"`, or `"shinytest"`.

Method `enableDebugLogMessages()`**:** Enable/disable debugging messages

Usage:

```
ShinyDriver$enableDebugLogMessages(enable = TRUE)
```

Arguments:

`enable` New value.

Method `logEvent()`**:** Add event to log.

Usage:

```
ShinyDriver$logEvent(event, ...)
```

Arguments:

`event` Event name

`...` Addition data to store for event

Method `getEventLog()`**:** Retrieve event log.

Usage:

```
ShinyDriver$getEventLog()
```

Method `getUrl()`**:** Get current url

Usage:

```
ShinyDriver$getUrl()
```

Method `getTitle()`**:** Get page title

Usage:

```
ShinyDriver$getTitle()
```

Method `getSource()`**:** Get complete source of current page.

Usage:

```
ShinyDriver$getSource()
```

Method `goBack()`**:** Return to previous page

Usage:

```
ShinyDriver$goBack()
```

Returns: Self, invisibly.

Method `refresh()`**:** Refresh the browser

Usage:

```
ShinyDriver$refresh()
```

Returns: Self, invisibly.

Method `takeScreenshot()`**:** Takes a screenshot of the current page and writes it to a PNG file or shows on current graphics device.

Usage:

```
ShinyDriver$takeScreenshot(file = NULL, id = NULL, parent = FALSE)
```

Arguments:

`file` File name to save the screenshot to. If `NULL`, then it will be shown on the R graphics device.

`id` If not-`NULL`, will take a screenshot of element with this id.

`parent` If `TRUE`, will take screenshot of parent of `id`; this is useful if you also want to capture the label attached to a Shiny control.

Returns: Self, invisibly.

Method `findElement()`**:** Find an HTML element on the page, using a CSS selector, XPath expression, or link text (for <a> tags). If multiple elements are matched, only the first is returned.

Usage:

```
ShinyDriver$findElement(
  css = NULL,
  linkText = NULL,
  partialLinkText = NULL,
  xpath = NULL
)
```

Arguments:

`css` CSS selector to find an HTML element.

`linkText` Find <a> HTML elements based on exact `innerText`

`partialLinkText` Find <a> HTML elements based on partial `innerText`

`xpath` Find HTML elements using XPath expressions.

Returns: A webdriver::Element.

Method `findElements()`**:** Find all elements matching CSS selection, xpath, or link text.

Usage:

```
ShinyDriver$findElements(
  css = NULL,
  linkText = NULL,
  partialLinkText = NULL,
  xpath = NULL
)
```

Arguments:

`css` CSS selector to find an HTML element.

`linkText` Find <a> HTML elements based on exact `innerText`

`partialLinkText` Find <a> HTML elements based on partial `innerText`

`xpath` Find HTML elements using XPath expressions.

Returns: A list of webdriver::Elements.

Method `waitFor()`**:** Waits until a JavaScript `expression` evaluates to `true` or the `timeout` is exceeded.

Usage:

```
ShinyDriver$waitFor(expr, checkInterval = 100, timeout = 3000)
```

Arguments:

`expr` A string containing JavaScript code. Will wait until the condition returns `true`.

`checkInterval` How often to check for the condition, in ms.

`timeout` Amount of time to wait before giving up (milliseconds).

Returns: TRUE if expression evaluates to true without error, before timeout. Otherwise returns NA.

Method waitForShiny(): Waits until Shiny is not busy, i.e. the reactive graph has finished updating. This is useful, for example, if you've resized the window with setWindowSize() and want to make sure all plot redrawing is complete before take a screenshot.

Usage:

```
ShinyDriver$waitForShiny()
```

Returns: TRUE if done before before timeout; NA otherwise.

Method waitForValue(): Waits until the input or output with name name is not one of ignored values, or the timeout is reached.

This function can be useful in helping determine if an application has initialized or finished processing a complex reactive situation.

Usage:

```
ShinyDriver$waitForValue(
  name,
  ignore = list(NULL, ""),
  iotype = c("input", "output", "export"),
  timeout = 10000,
  checkInterval = 400
)
```

Arguments:

name Name of a shiny widget.

ignore List of possible values to ignore when checking for updates.

iotype Type of the Shiny widget. Usually shinytest finds the widgets by their name, so this is only needed if you use the same name for an input and output widget.

timeout Amount of time to wait before giving up (milliseconds).

checkInterval How often to check for the condition, in ms.

Method listWidgets(): Lists the names of all input and output widgets

Usage:

```
ShinyDriver$listWidgets()
```

Returns: A list of two character vectors, named input and output.

Method checkUniqueWidgetNames(): Check if Shiny widget names are unique.

Usage:

```
ShinyDriver$checkUniqueWidgetNames()
```

Method executeScript(): Execute JS code

Usage:

```
ShinyDriver$executeScript(script, ...)
```

Arguments:

script JS to execute.

`...` Additional arguments to script.

Returns: Self, invisibly.

Method `executeScriptAsync()`**:** Execute JS code asynchronously.

Usage:

```
ShinyDriver$executeScriptAsync(script, ...)
```

Arguments:

`script` JS to execute.

`...` Additional arguments to script.

Returns: Self, invisibly.

Method `findWidget()`**:** Finds the a Shiny input or output control.

Usage:

```
ShinyDriver$findWidget(name, iotype = c("auto", "input", "output"))
```

Arguments:

`name` Name of a shiny widget.

`iotype` Type of the Shiny widget. Usually shinytest finds the widgets by their name, so this is only needed if you use the same name for an input and output widget.

Returns: A Widget.

Method `expectUpdate()`**:** It performs one or more update operations via the browser, thens waits for the specified output(s) to update. The test succeeds if all specified output widgets are updated before the `timeout`. For updates that involve a lot of computation, increase the timeout.

Usage:

```
ShinyDriver$expectUpdate(
  output,
  ...,
  timeout = 3000,
  iotype = c("auto", "input", "output")
)
```

Arguments:

`output` Name of output control to check.

`...` Name-value pairs used to update inputs.

`timeout` Amount of time to wait before giving up (milliseconds).

`iotype` Type of the Shiny widget. Usually shinytest finds the widgets by their name, so this is only needed if you use the same name for an input and output widget.

Method `setInputs()`**:** Sets input values.

Usage:

```
ShinyDriver$setInputs(
  ...,
  wait_ = TRUE,
  values_ = TRUE,
  timeout_ = 3000,
```

```
  allowInputNoBinding_ = FALSE,
  priority_ = c("input", "event")
)
```

Arguments:

`...` Name-value pairs, `name1 = value1, name2 = value2` etc. Enput with name `name1` will be assigned value `value1`.

`wait_` Wait until all reactive updates have completed?

`values_` If `TRUE`, will return final updated values of inputs.

`timeout_` Amount of time to wait before giving up (milliseconds).

`allowInputNoBinding_` When setting the value of an input, allow it to set the value of an input even if that input does not have an input binding.

`priority_` Sets the event priority. For expert use only: see https://shiny.rstudio.com/articles/communicating-with-js.html#values-vs-events for details.

Returns: Returns updated values, invisibly.

Method `uploadFile()`**:** Uploads a file to a file input.

Usage:

```
ShinyDriver$uploadFile(..., wait_ = TRUE, values_ = TRUE, timeout_ = 3000)
```

Arguments:

`...` Name-path pairs, e.g. `name1 = path1`. The file located at `path1` will be uploaded to file input with name `name1`.

`wait_` Wait until all reactive updates have completed?

`values_` If `TRUE`, will return final updated values of download control.

`timeout_` Amount of time to wait before giving up (milliseconds).

Method `snapshotInit()`**:** Download a snapshot. Generally, you should not call this function yourself; it will be generated by `recordTest()` as needed.

Usage:

```
ShinyDriver$snapshotInit(path, screenshot = TRUE)
```

Arguments:

`path` Directory to save snapshots.

`screenshot` Take screenshots for each snapshot?

Method `snapshot()`**:** Take a snapshot. Generally, you should not call this function yourself; it will be generated by `recordTest()` as needed.

Usage:

```
ShinyDriver$snapshot(items = NULL, filename = NULL, screenshot = NULL)
```

Arguments:

`items` Elements to include in snapshot

`filename` Filename to use. It is recommended to use a `.json` file extension.

`screenshot` Take a screenshot? Overrides value set by `$snapshotInit()`

Method `snapshotCompare()`**:** Deprecated

Usage:

```
ShinyDriver$snapshotCompare(...)
```

Arguments:

`...` Ignored

Method `snapshotDownload()`**:** Snapshot a file download action. Generally, you should not call this function yourself; it will be generated by `recordTest()` as needed.

Usage:

```
ShinyDriver$snapshotDownload(id, filename = NULL)
```

Arguments:

`id` Output id of `shiny::downloadButton()`/`shiny::downloadLink()`

`filename` File name to save file to. The default, `NULL`, generates an ascending sequence of names: `001.download`, `002.download`, etc.

Method `getAppDir()`**:** Directory where app is located

Usage:

```
ShinyDriver$getAppDir()
```

Method `getAppFilename()`**:** App file name, i.e. `app.R` or `server.R`. `NULL` for Rmds.

Usage:

```
ShinyDriver$getAppFilename()
```

Method `getTestsDir()`**:** Directory where tests are located

Usage:

```
ShinyDriver$getTestsDir()
```

Method `getRelativePathToApp()`**:** Relative path to app from current directory.

Usage:

```
ShinyDriver$getRelativePathToApp()
```

Method `getSnapshotDir()`**:** Directory where snapshots are located.

Usage:

```
ShinyDriver$getSnapshotDir()
```

Method `isRmd()`**:** Is this app an Shiny Rmd document?

Usage:

```
ShinyDriver$isRmd()
```

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
ShinyDriver$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

`testApp` *Run tests for a Shiny application*

Description

Run tests for a Shiny application

Usage

```
testApp(
  appDir = ".",
  testnames = NULL,
  quiet = FALSE,
  compareImages = TRUE,
  interactive = is_interactive(),
  suffix = NULL
)
```

Arguments

`appDir`	Path to directory containing a Shiny app (e.g. `app.R`) or single interactive `.Rmd`.
`testnames`	Test script(s) to run. The .R extension of the filename is optional. For example, `"mytest"` or `c("mytest", "mytest2.R")`. If `NULL` (the default), all scripts in the tests/ directory will be run.
`quiet`	Should output be suppressed? This is useful for automated testing.
`compareImages`	Should screenshots be compared? It can be useful to set this to `FALSE` when the expected results were taken on a different platform from the one currently being used to test the application.
`interactive`	If there are any differences between current results and expected results, provide an interactive graphical viewer that shows the changes and allows the user to accept or reject the changes.
`suffix`	An optional suffix for the expected results directory. For example, if the suffix is `"mac"`, the expected directory would be `mytest-expected-mac`.

See Also

`snapshotCompare()` and `snapshotUpdate()` if you want to compare or update snapshots after testing. In most cases, the user is prompted to do these tasks interactively, but there are also times where it is useful to call these functions from the console.

Widget *A Shiny Widget*

Description

A Widget object represents a Shiny input or output control, and provides methods for finer grained interaction.

Methods

Public methods:

- Widget$new()
- Widget$getName()
- Widget$getElement()
- Widget$getHtml()
- Widget$getType()
- Widget$getIoType()
- Widget$isInput()
- Widget$isOutput()
- Widget$getValue()
- Widget$setValue()
- Widget$click()
- Widget$sendKeys()
- Widget$listTabs()
- Widget$uploadFile()
- Widget$clone()

Method new(): Create new Widget

Usage:

```
Widget$new(name, element, type, iotype = c("input", "output"))
```

Arguments:

name Name of a Shiny widget.

element webdriver::Element

type Widget type

iotype Input/output type.

Method getName(): Control id (i.e. inputId or outputId that control was created with).

Usage:

```
Widget$getName()
```

Method getElement(): Underlying webdriver::Element() object.

Usage:

```
Widget$getElement()
```

Method `getHtml()`**:** retrieve the underlying HTML for a widget

Usage:

```
Widget$getHtml()
```

Method `getType()`**:** Widget type, e.g. `textInput`, `selectInput`.

Usage:

```
Widget$getType()
```

Method `getIoType()`**:** Is this an input or output control?

Usage:

```
Widget$getIoType()
```

Method `isInput()`**:** Is this an input control?

Usage:

```
Widget$isInput()
```

Method `isOutput()`**:** Is this an output control?

Usage:

```
Widget$isOutput()
```

Method `getValue()`**:** Get current value of control.

Usage:

```
Widget$getValue()
```

Method `setValue()`**:** Set value of control.

Usage:

```
Widget$setValue(value)
```

Arguments:

`value` Value to set for the widget.

Method `click()`**:** scrolls the element into view, then clicks the in-view centre point of it.

Usage:

```
Widget$click()
```

Returns: self, invisibly.

Method `sendKeys()`**:** Send specified key presses to control.

Usage:

```
Widget$sendKeys(keys)
```

Arguments:

`keys` Keys to send to the widget or the app. See webdriver::key for how to specific special keys.

Method `listTabs()`**:** Lists the tab names of a `shiny::tabsetPanel()`. It fails for other types of widgets.

Usage:

```
Widget$listTabs()
```

Method `uploadFile()`**:** Upload a file to a `shiny::fileInput()`. It fails for other types of widgets.

Usage:

```
Widget$uploadFile(filename)
```

Arguments:

`filename` Path to file to upload

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
Widget$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

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