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TUESDAY, 18 MARCH 2014

Packaging your Shiny App as an Windows desktop app

INTRODUCTION

In developing SkyScorer I've sought ways to package it as a standalone Windows app. The advantages of doing this is quite clear:

- The end-user doesn't need any R knowledge to run the app
- The app can be distributed as a simple download

In this tutorial I will go through the process that is needed to create a standalone Windows Shiny app.

PORTABLE R & CHROME

Firstly download Portable R and Portable Chrome. These will serve as the backbone of our app. Essentially, we are packing along with our app self-contained copies of R and Chrome:

- Portable R: http://sourceforge.net/projects/rportable/
- Portable Chrome: http://portableapps.com/apps/internet/google_chrome_portable

Once you have downloaded the installation files for Portable R and Portable Chrome just install them and note down their installation path. We will use this later.

For simplicity I will assume you can make a folder in your C Drive called YourApp, but the folder could be situated anywhere. Now copy the portable R installation and the Portable Chrome installation into the C:\YourApp folder. Also copy your Shiny folder containing server.R and ui.R (or a sole app.R in the case of single file Shiny app) into the folder. So now you should have three folders in your C:\YourApp directory

- C:\YourApp\GoogleChromePortable
- C:\YourApp\R-Portable
- C:\YourApp\Shiny

SETTING UP PORTABLE R

Just run R-Portable.exe and install all the libraries that are needed by your Shiny app. They will be stored in the Portable R folder.

SETTING UP PORTABLE CHROME

Make sure you have the following line in the GoogleChromePortable.ini file which is in the GoogleChromePortable folder

AdditionalParameters= --app="http://localhost:8888"

The additional parameter there makes Chrome start up in app model (i.e. with address bar, bookmarks etc) which makes it look more like a native app.

THE .BAT AND .VBS FILES

In the C:\YourApp folder create two files

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- run.vbs
- runShinyApp.R

The contents

```
1  Randomize
2  CreateObject("Wscript.Shell").Run "R-Portable\App\R-Portable\bin\R.exe CMD BATCH --
```

run.vbs hosted with ❤ by **GitHub**   view raw

```
1  .libPaths("./R-Portable/App/R-Portable/library")
2  # the path to portable chrome
3  browser.path = file.path(getwd(),"GoogleChromePortable/GoogleChromePortable.exe")
4  options(browser = browser.path)
5  shiny::runApp("./Shiny/",port=8888,launch.browser=TRUE)
```

runShinyApp.R hosted with ❤ by **GitHub**   view raw

Now WAIT! Don't click on run.vbs just yet! I advise you to add the following to the server.R inside the shinyServer(function(input, output, **session**) { ... }). Please make sure you pass **session** as the third argument! The code you need to add is

```
1  shinyServer(function(input, output, session)  { ... }) {
2      # ... your other server code here
3
4      # close the R session when Chrome closes
5      session$onSessionEnded(function() {
6       stopApp()
7       q("no")
8      })
9
10     # ... your other server code here
11  }
```

session.r hosted with ❤ by **GitHub**   view raw

This will close the Rsession when you close the browser (in this case Portable Chrome). Now clicking on run.vbs should start your app!

Simply zip up your folder C:\YourApp and distribute! Your users need only double click on run.vbs to run the app.
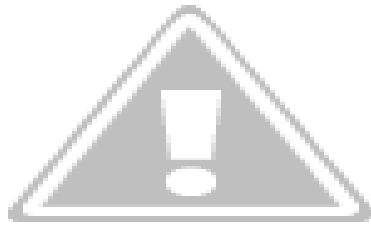
If you want to appear more professional you can follow the instruction in the next section to create a setup.exe file for you app.

INNOSETUP

Download InnoSetup http://www.jrsoftware.org/isdl.php and install the software and run the Wizard for creating a new setup file. Everything should be pretty self-explanatory, just make sure that InnoSetup knows to use the C:\YourApp directory. Basically InnoSetup will package everything in the directory into an .exe file which acts as a setup wizard.

I chose my default install path to be somewhere other than C:\Program Files as I have found a few issues with it on Windows 8 (no problem on Windows XP).

Once you are done with the InnoSetup Wizard you should end up with a .iss file looking like this

The code in the .iss file should be self-explanatory. I only added a few lines which I thought was helpful. Under *[setup]* add *PrivilegesRequired=none,* this will not request for admin privilege when installing the app so should allow the app to be installed by most users. Also I created a shortcut to the desktop using the below

[Icons]
Name: "{commondesktop}\YourApp"; Filename: "{app}\Apps\run.vbs"; IconFilename: {app}\Your.ico

Of course I have my own custom .ico file to make the shortcut look unique and professional.

Hope this helps!

Posted by xiaodai at 05:28

g+1 Recommend this on Google

Labels: r, Shiny

21 comments:

jrnew 19 Mar 2014, 10:14:00

Kudos for writing out the whole process; very helpful! Will try to get this set up for my own app too.

Reply

Anit 26 Mar 2014, 20:56:00

while running the run.vbs file . it generates .rout file but not starts the browser.

Reply

Replies

xiaodai   27 Mar 2014, 03:34:00

Thanks for the bug report. I found some errors with the original post (corrected already).

So you need these changes (I recommend restarting your computer too):

change your run.vbs to

Randomize
CreateObject("Wscript.Shell").Run   "R-Portable\App\R-Portable\bin\R.exe
CMD BATCH --vanilla --slave runShinyApp.R" & " " & RND & " ", 0, False

and your runShinyApp.R to

.libPaths("./R-Portable/App/R-Portable/library")
# you need the full path to portable chrome
browser.path   <-
file.path(getwd(),"GoogleChromePortable/GoogleChromePortable.exe")
options(browser = browser.path)
shiny::runApp("./Shiny/",port=8888,launch.browser=TRUE)

Reply

praneeth 5 Apr 2014, 03:33:00

Hi,

I am getting the following error when I was running
Error in setwd(appDir) : cannot change working directory.

Please Help !!

Reply

   Replies

   xiaodai   6 Feb 2015, 09:43:00

   This error typically occurs if your working directory does not contain the shiny
   ui.R and server.R files.

   I guess you put print(getwd()) into the runShinyApp.R file and check the .Rout
   file to see where the working directory is set and update your code according.
   You can set the working directory using setwd(...)

Reply

xiaodai   7 Apr 2014, 13:52:00

This comment has been removed by the author.

Reply

MusX 10 May 2014, 09:57:00

Hi,
Thank you for the process description.
Should this be accessible from the other machines within the same LAN? or is it linux
required for that?

Reply

Siddhant Patel 2 Oct 2014, 01:12:00

Wont the App file package become too large; 200MB+ even for a small app as installing
chrome and R alone takes that much size. Any workaround to that?

Reply

Replies

xiaodai   2 Oct 2014, 21:46:00

I think this approach is meant for substantial apps only. The future is distrbuting apps online anyway.

Reply

Isaac 3 Jan 2015, 11:43:00

Very nice post! The most recent version of shiny allows one .R file (app.R) instead of two separate files for the ui and server. How would having one app.R file change the approach you outline above? Any chance you might be able to update the tutorial for these cases?

Great work!

Reply

Replies

xiaodai   6 Feb 2015, 09:40:00

Almost nothing has changed. Simply copy the Shiny folder which now should contain app.R instead of server.R and ui.R in the appropriate folder in the tutorial. I have updated the tutorial with a brief sentence

Isaac 6 Feb 2015, 11:58:00

Thanks, will give it a shot! Do you have a sense how to do this on a mac?

xiaodai   6 Feb 2015, 12:14:00

@Isaac

Check this
http://www.r-bloggers.com/shell-script-to-build-os-x-shiny-apps-from-github-gists/

Reply

ehk116 6 Feb 2015, 01:41:00

This is great...if I could get it to work :(I am getting the following warning: http://127.0.0.1:8888' had status 127 in a txt file after hitting the run.vbs. I am sure its my error but any way you could point me to a resource to fix it? thanks!!!

Reply

Replies

xiaodai   6 Feb 2015, 09:34:00

No such error for me. Perhaps if you could post your run.vbs and runshiny.r and on gist.github.com? I am happy to have a look

ehk116 6 Feb 2015, 12:19:00

Thank   you   so   much!!   runShinyApp   is   here:
https://gist.github.com/anonymous/f31176dcc385c177bb1b

ehk116 6 Feb 2015, 12:21:00

The   run.vbs   is   here:
https://gist.github.com/anonymous/3057cf6266b4c0081497

I do appreciate your help greatly and can't wait to get this working.

xiaodai   6 Feb 2015, 12:30:00

See   my   comments   in
https://gist.github.com/anonymous/f31176dcc385c177bb1b

ehk116 7 Feb 2015, 14:26:00

THANK YOU! Totally works now. Next step for me is the .exe step. Cannot thank you enough.

Reply

ehk116 21 Mar 2015, 14:47:00

Hello again! Having a bit of trouble getting the innosetup to work...and your .iss file image isn't working. Any chance you have that image handy so I can poach?! thanks.

Reply

文杰 24 Mar 2015, 13:45:00

It help me a lot! Thank you very much!

Reply

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