Install R and QlikView Advanced Analytics Integration Demos

QlikView November 2017

One-time Install and Configuration

1. Install QlikView November 2017

QlikView November 2017 is required to support engine extensions. Both QlikView Server and QlikView Desktop are supported.

Important: These instructions will only work with the November 2017 Release of QlikView. If you are trying this with earlier versions this will not work.

License QlikView Desktop and/or Server.

Verify that QlikView November 2017 is up and running and that you can view the default installed apps before proceeding to step 2 below.

2. Download the Open Source SSEtoRserve extension, examples files and documentation

Follow the download instructions found on the Advanced Analytics Integration page on Qlik Community to download the SSEtoRserve plugin and the example QVW files listed there.

3. Download and Install R

Visit: https://cran.r-project.org/bin/windows/base/

Select Download for the latest version of R for Windows

> These instructions refer to version 3.4.1 of R, what if there is a newer version of R released at the time I'm downloading?:
> Depending on what changes were made to R in the newer version, these instructions will likely still work for the upcoming R versions. If you do decide to use a newer version, simply replace every reference to the path "\R-3.4.1" found below with the path for the newer version as "\R-3.{x}.{x}". Alternatively, you should still be able to download the R 3.4.1 release and simply use these instructions as written.

Run the Installer

- Select "English"
- Click Next
- Click Next to accept the terms
- Change the installation location to:

`C:\R\ R-3.4.1`

i.e. Remove this "Program Files" from the path, this is very important to make running other components properly later.

> Why am I changing the default install path for R?:
> The goal is to install R for use by all users, not just the current user. This will facilitate things like running from a service account later. The default install path (i.e. in "Program Files") requires Administrator permissions to install needed libraries (see below) for all users rather than the default for just the current user. To avoid this complication we install R outside of "Program Files".
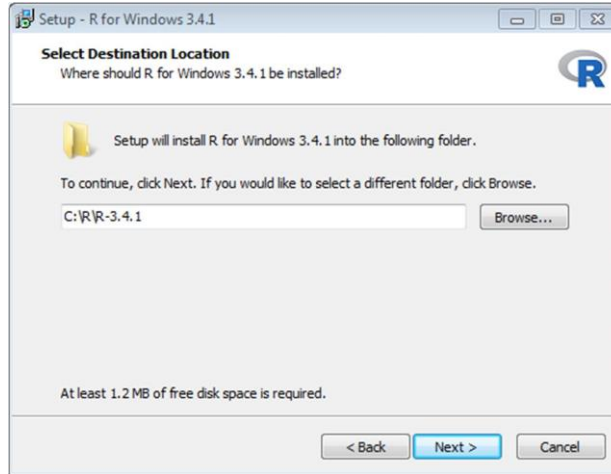
- Click Next

- Select "64-bit User Installation" from the selection menu (deselect 32-bit Files). • Click Next
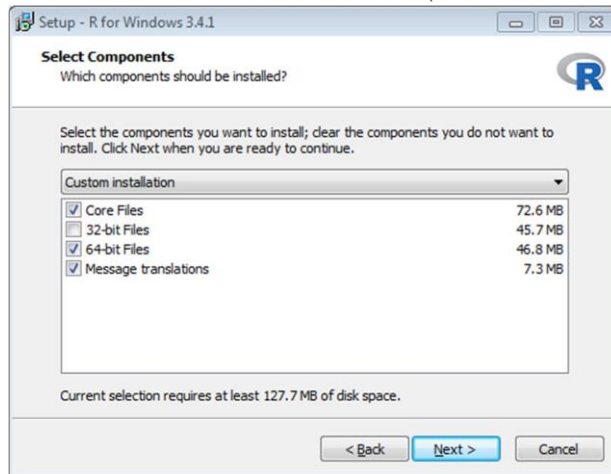
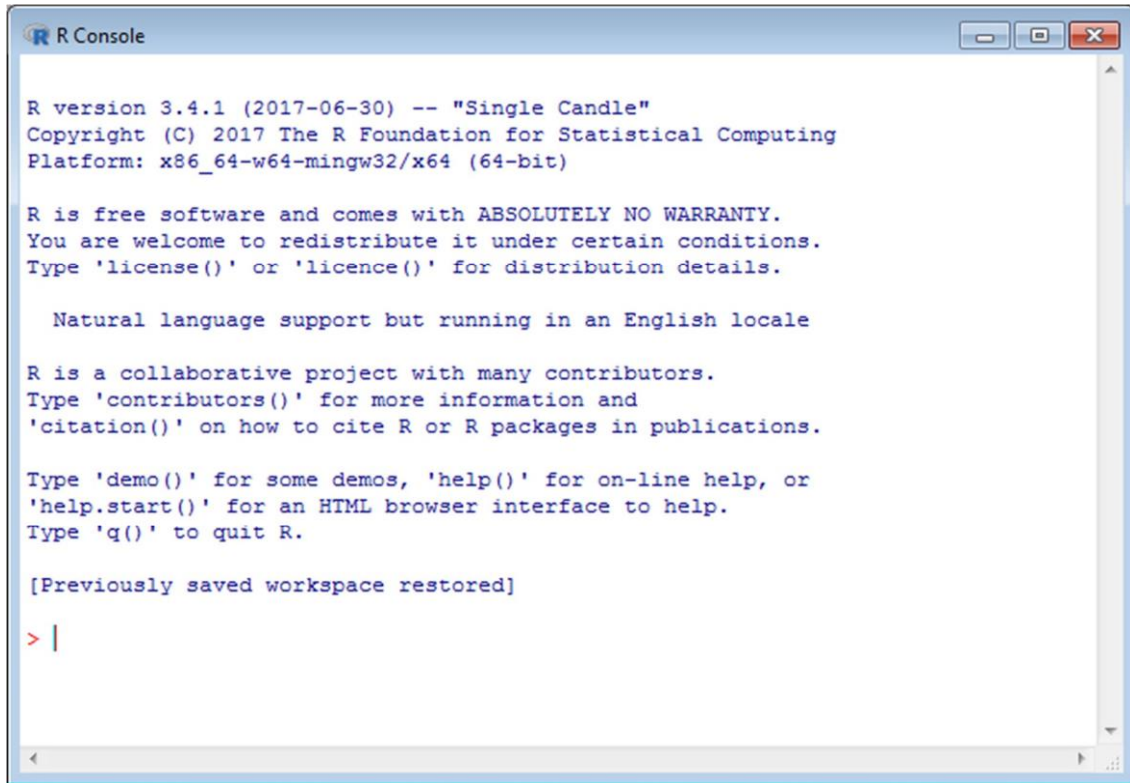- Click Next

- Click Next

- Click Next

Installation should run and complete.

- Click Finish

4. Install Rserve

Run "R", there should be a desktop Icon

Enter to the console:

```
R Console                                                    [ _ ][ □ ][ ✖ ]

R version 3.4.1 (2017-06-30) -- "Single Candle"
Copyright (C) 2017 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

  Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

[Previously saved workspace restored]

>
```

```
install.packages("Rserve", lib = "C:\\R\\R-3.4.1\\library")
```

Why am I specifying a lib path in this step?:
The default, if a lib path is not specified, is to install the libraries for the current user only (i.e. in C:\Users\{user}\Documents\R\R-3.4.0\library). Specifying this lib path above forces R to install those libraries for all users (i.e. in C:\R\R-3.4.0\library).

When asked for a mirror select the default by clicking OK

```
HTTPS CRAN mirror

0-Cloud [https]
Algeria [https]
Australia (Melbourne) [https]
Australia (Perth) [https]
Austria [https]
Belgium (Ghent) [https]
Brazil (RJ) [https]
Brazil (SP 1) [https]
Bulgaria [https]
Canada (MB) [https]
Chile 1 [https]
Chile 2 [https]
China (Beijing) [https]
China (Hefei) [https]
China (Lanzhou) [https]
Colombia (Cali) [https]
Czech Republic [https]
Denmark [https]
France (Lyon 1) [https]
France (Lyon 2) [https]
France (Marseille) [https]
France (Montpellier) [https]

        OK        Cancel
```

Test run Rserve by typing:

```
library(Rserve)
```

Then type:

```
Rserve()
```

You should get the following message
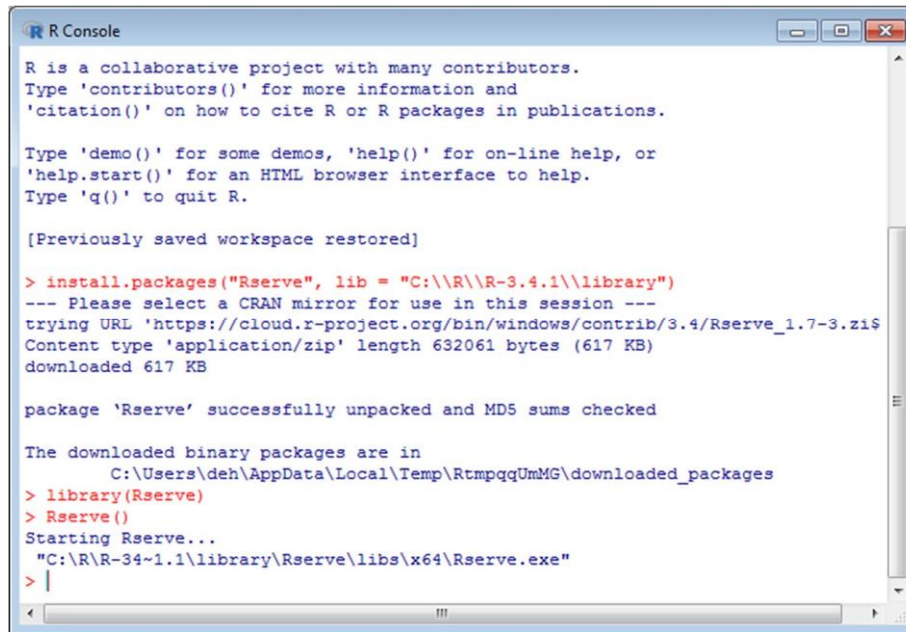
5. Install any required R packages

The packages required will change dependent on the different demos that are being provided. The following libraries will allow you to use all the sample apps included in the SSEtoRserve archive.

```
install.packages("jsonlite", lib = "C:\\R\\R-3.4.1\\library")
install.packages("ChainLadder", lib = "C:\\R\\R-3.4.1\\library")
install.packages("forecast", lib = "C:\\R\\R-3.4.1\\library")
install.packages("rpart", lib = "C:\\R\\R-3.4.1\\library")
install.packages("d3r", lib = "C:\\R\\R-3.4.1\\library")
install.packages("partykit", lib = "C:\\R\\R-3.4.1\\library")
install.packages("tseries", lib = "C:\\R\\R-3.4.1\\library")
install.packages("colorspace", lib = "C:\\R\\R-3.4.1\\library")
```

Close R (When prompted to save workspace image, it is OK to say 'No').

6. Configure Rserve to run with one click

> What is Rserve and why is it important?:
>
> Rserve is a library for R that enables external communications from R to other programs. Rserve must be running for the SSEtoRserve connector to work. In this case Rserve has been compiled as a separate .exe which makes it easy to start R & Rserve by launching a single .exe file.

For Rserve to run with a single click we need to copy some files to a different location.

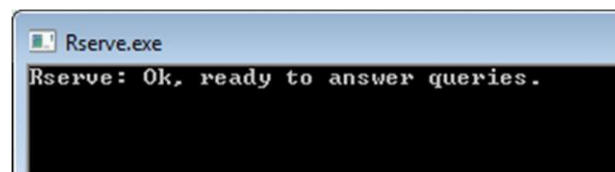Navigate to the following folder:

`C:\R\R-3.4.1\library\Rserve\libs\x64`

Copy the three files in this folder

Paste these files into the following folder:

`C:\R\R-3.4.1\bin\x64`

Run "Rserve"

You should get the following window:

Rserve is now up and running. Before you start QlikView need to have this running. The best way is to create a shortcut in a convenient location to "Rserve" or pin to the Start Menu or Task Bar in windows.

Alternatively, if you wish to see the output from the connection and use for debugging of Qlik apps then run **rserve_d.exe**.

7. Configure analytic connections

For QlikView Server - Create/Edit settings.ini file
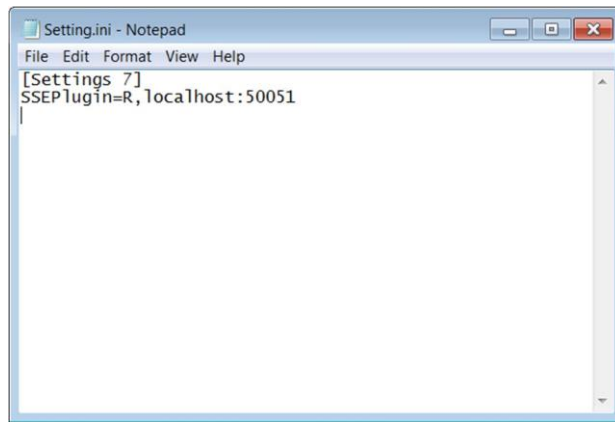
Create/Edit the file "Settings.ini" in the following folder:
`C:\ProgramData\QlikTech\QlikViewServer`

Add the following lines:
`[Settings 7]`
`SSEPlugin=R,localhost:50051`

Ensure there is a blank line at the end of the file.

What do each of these parameters do?:

Name: is the name by which QlikView will know the connection. The "R" you enter here corresponds to the "R" in the any of the chart expressions that call this connections (e.g. R.ScriptEval…). The name defined in the QMC must match the Name used in the expression.

Host: is the address of the machine where the connector is running (SSEtoRserve.exe in our case). **Port:** is the port over which QlikView and the connector should communicate (50051 by default). If you change this you must also change the port in the SSEtoRserve.exe.config file (found in the same directory as SSEtoRserve.exe).

Refer to the AAI documentation for usage of the other parameters.
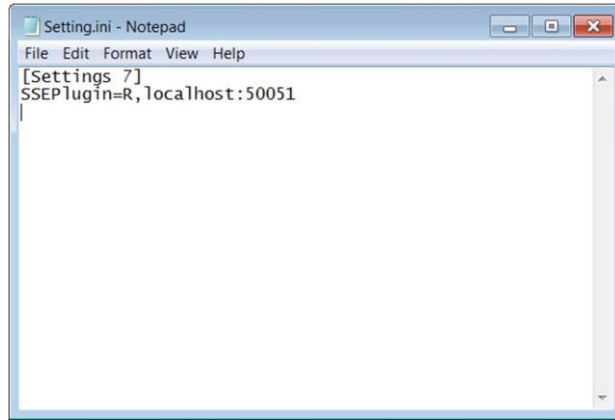
For QlikView Desktop - Create/Edit settings.ini file

Create/Edit the file "Settings.ini" in the following folder:
`C:\Users\<userid>\AppData\Roaming\QlikTech\QlikView`

Add the following lines:
`[Settings 7]`
`SSEPlugin=R,localhost:50051`

Ensure there is a blank line at the end of the file.

Note: these parameters are the same as described above in the section on configuring the Server in the QMC.

8. Add Sample Applications

Copy any sample applications to the QlikView "Documents" folder (different folders for QlikView Desktop and Server). A sample application can be found and downloaded on the Advanced Analytics Integration page on Qlik Community.

9.   Start SSEtoRserve.exe

Navigate to the archive you unzipped in step 2 above and locate SSEtoRserve.exe. Double click SSEtoRserve.exe to start the connector. You should see the following window open:
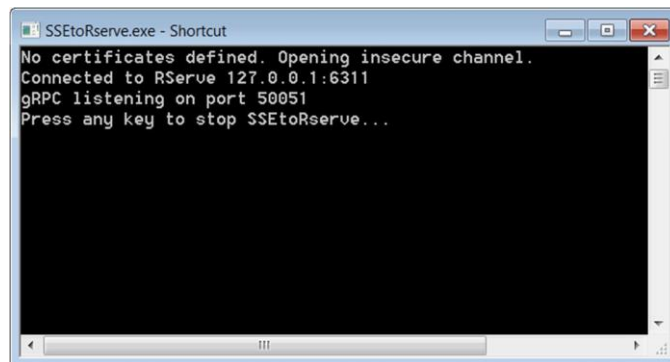
SSEtoRserve is now up and running. Before you start QlikView you need to have this running. The best way is to create a shortcut in a convenient location to "SSEtoRserve" or pin to the Start Menu or Task Bar in windows

10.   Restart the QlikView services

Open the Services application on Windows and restart the five QlikView services
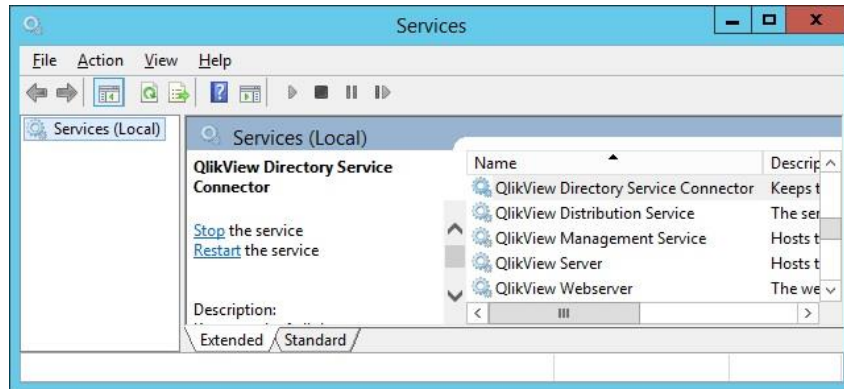
Alternatively, for Desktop, close and reopen QlikView Desktop.

Why do I have to restart the QlikView services?:
At present, analytic connections are only recognized by during a restart. Thus any time you start or change an analytic connection, you must restart the QlikView services. This behavior may change in the future.

## 11.	Open QlikView App that Calls Out to R

Open any QlikView App that contains expressions that call out to R. Objects containing expressions that call out to R should now be displayed correctly. If you see an error or shaded out object, please refer to the Troubleshooting section below.

Process Following a Restart

1. Start Rserve

Double-click on the shortcut icon to rserve.exe you created in step 6 above.

2. Start SSEtoRserve

Double-click on the shortcut icon to SSEtoRserve.exe you created in step 9 above.

3. Restart the QlikView services

Restart the QlikView services or QlikView Desktop as described in step 10 above.

Troubleshooting

1. Ensure that QlikView is running properly (i.e. you can read normal QlikView apps).

2. Ensure that you have read the documentation that was bundled in the .zip archive.

3. Ensure that you have registered the connector correctly (see step 7 in the install & config instructions above):
   a. On QlikView Server, you have added the proper lines to the Settings.ini file, or.
   b. On QlikView Desktop, you have added the proper lines to the Settings.ini file.

4. Ensure that Rserve.exe is running.

5. Ensure that SSEtoRserve.exe is running.

6. Ensure that you have restarted the QlikView services after doing all the above.

7. Ensure that you have what R packages are needed by the app you are trying to access and that you have installed all necessary libraries (see step 5 in the install & config instructions above). These instructions cover all necessary R libraries needed by all the example and demo apps listed in this document, but it is possible that in the future new demos will be created that require different libraries. If so you must also load those libraries.

8. Ensure that the connector name you used in step 3 above is 'R' and not something else (all of the examples apps that connect to R refer to this connection as R.{function name} and that "R" must match the name registered in the ini file).

9. Ensure that server location you used when registering the connector in step 3 above is the same as where SSEtoRserve.exe is running (if using multiple machines).

10. Ensure that the port you used when registering the connector in step 3 above is the same as is listed in SSetoRServe.exe.config (typically 50051).

11. Ensure nothing else is also trying to use that port (run "netstat -a -b" from the command prompt).

12. If the port is in use, change to an open port number in troubleshooting steps 3 and 9 above.

13. Ensure that the Rserve port listed in SSetoRServe.exe.config (typically 6311) is the one Rserve is using and not in use by another process.

14. Ensure that the Rserve server address in SSetoRServe.exe.config is the address of the machine where Rsreve is running (if using multiple machines).

15. Ensure that none of the needed ports are being blocked by any firewalls on any machines that need those ports.

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