R Integration
With
Qlik Sense Feb 2018

Table of Contents:

1. Introduction:

✓ Document helps you in setting up R with Qlik Sense.

✓ Pre-requisites are that you need to have Qlik Sense Feb 2018 version installed.

✓ Document will demonstrate integration of R with Qlik Sense Enterprise and Qlik Sense Desktop.

2. Integration of R:

2.1 Download the Example qvf files and extension objects:

Go to Advanced Analytic Integration page in Qlik Community and download the "Example qvf files and extension objects for use with R and AAI"

https://community.qlik.com/community/advanced-analytics-integration
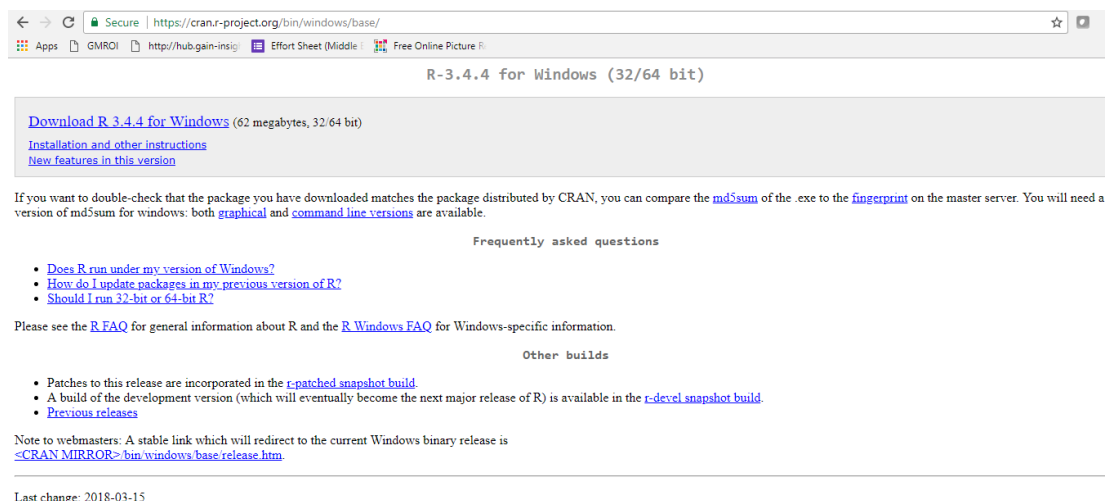
2.2 Download and install the latest version of R:

Using below link we can download the R latest version.

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

Please refer below screen sort.

✓ Run the installer

✓ Select "English"

✓ Click Next

✓ Click Next to accept the terms

✓ Change the installation location to C:\R\R-3.4.2   (Remove the program files from the path for other components to run smoothly)

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".
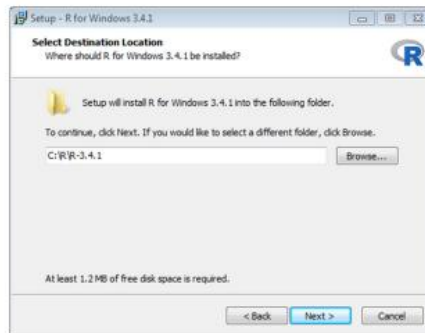
✓ Click Next

✓ Select 64-bit User installation from the selection menu (Deselect the 32-bit Files)

✓ Click Next
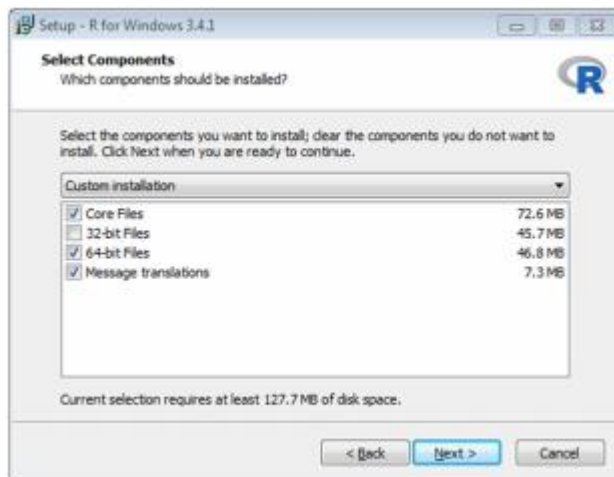
✓ Click Next

✓ Click Next

✓ Click Next (Installation will begin)

✓ Click Finish

2.3 Install R Serve:

- ✓ Run "R" from the desktop icon.

- ✓ Enter the console:

```
R 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]

>
```
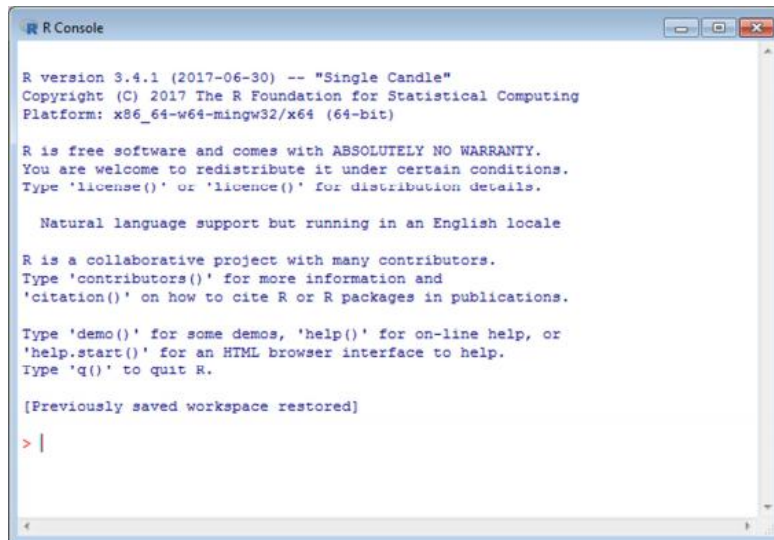
- ✓ Type: install.packages("Rserve",lib="C:\\R\\R-3.4.4\\library")

- ✓ Select default mirror by clicking "Ok"

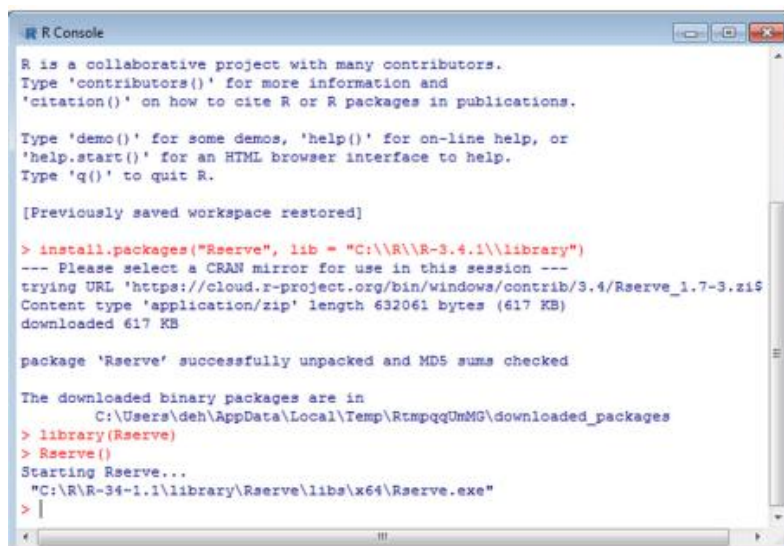- ✓ Test run Rserve by typing library(Rserve) and then Rserve()

```
R R Console

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")
--- Please select a CRAN mirror for use in this session ---
trying URL 'https://cloud.r-project.org/bin/windows/contrib/3.4/Rserve_1.7-3.zi$
Content type 'application/zip' length 632061 bytes (617 KB)
downloaded 617 KB

package 'Rserve' successfully unpacked and MD5 sums checked

The downloaded binary packages are in
        C:\Users\deh\AppData\Local\Temp\RtmpqqUmMG\downloaded_packages
> library(Rserve)
> Rserve()
Starting Rserve...
 "C:\R\R-34-1.1\library\Rserve\libs\x64\Rserve.exe"
>
```

2.4 Install required R packages:

You need to install following packages

install.packages("jsonlite",lib="C:\\R\\R-3.4.4\\library")

install.packages("ChainLadder",lib="C:\\R\\R-3.4.4\\library")

install.packages("forecast",lib="C:\\R\\R-3.4.4\\library")

install.packages("rpart",lib="C:\\R\\R-3.4.4\\library")

install.packages("d3r",lib="C:\\R\\R-3.4.4\\library")

install.packages("partykit",lib="C:\\R\\R-3.4.4\\library")

install.packages("tseries",lib="C:\\R\\R-3.4.4\\library")

install.packages("colorspace",lib="C:\\R\\R-3.4.4\\library")

You can now close R.

2.5 Configure Rserve to run with one click:

Navigate to the folder   C:\R\R-3.4.4\library\Rserve\libs\x64 (copy the 3 files from here and paste it in   C:\R\R-3.4.4\bin\x64

Run "Rserve"

You will get the following screen
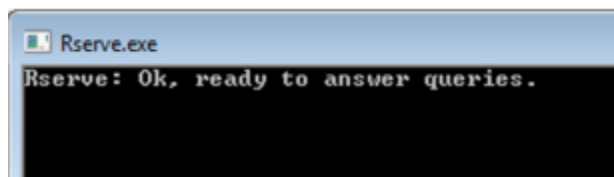
Alternatively, if you wish to see the output from the connection and use for debugging of Qlik apps, then run rserve_d.exe

2.6 Configure Server side extensions:

2.6.1 For Qlik Sense Server – Register the "Analytic Connections in QMC

- ✓ Open QMC and click on "Analytic Connections"
- ✓ Create New
- ✓ Add the connection with
- ✓ Name :"R"
- ✓ Host: "localhost"
- ✓ Port: 50051
- ✓ Leave other fields with default values and click "Apply".

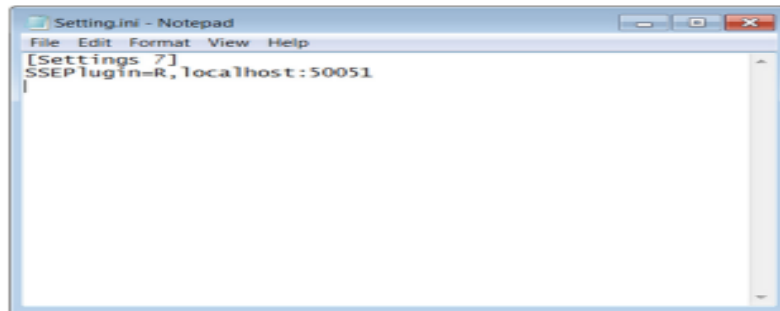## 2.6.2 For Qlik Sense Desktop - Create/Edit settings.ini file

- ✓ Create/Edit the file "Settings.ini" in the following folder:

- ✓ C:\Users\<userid>\Documents\Qlik\Sense\

- ✓ Add the following lines:

- ✓ SSEPlugin=R, localhost:50051

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

2.7 Add sample applications:

2.7.1 For Qlik Sense Server

- ✓ Add sample applications to Qlik Sense Enterprise, import using QMC.

- ✓ Sample applications can be found in Advanced Analytic Integration page in the community.

- ✓ You can check for apps "Iris" and "Air Passengers".

- ✓ Also download the extension objects used in the apps "variableslider" and "decisiontree"

- ✓ Now you can see that some sheets may be faded out in color or not available.

2.7.2 For Qlik Sense Desktop

- ✓ Add sample applications to the "App" folder in Qlik Sense Desktop

- ✓ Sample applications can be found in Advanced Analytic Integration page in the community.

- ✓ You can check for apps "Iris" and "Air Passengers".

- ✓ Also download the extension objects used in the apps "variableslider" and "decisiontree"

- ✓ Now you can see that some sheets may be faded out in color or not available.

3. Download SSEtoRserve and Configure:

- ✓ Using the below link you can download the sse-r-plugin

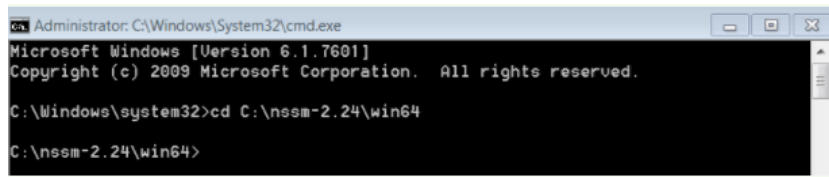 https://github.com/qlik-oss/sse-r-plugin/releases
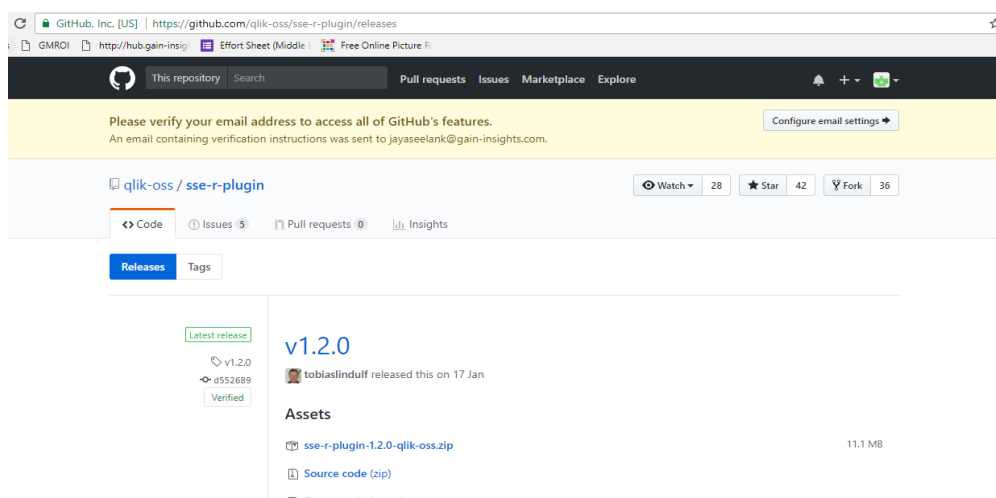
- ✓ We need to start the SSEtoRserve.exe, this will start the connector.

- ✓ If you are not able to locate the SSEtoRserve.exe file in your R directory search for SSEtoRserve.exe in C drive.

- ✓ To Run the Qlik Sense R-Plugin as a windows service you can use the following link.

- ✓ Use the link and follow the procedures to start the SSEtoRserve.exe.

https://community.qlik.com/blogs/qlikviewdesignblog/2017/07/07/automatically-start-the-r-plugin

3.1 Download nssm and Configure:

- ✓ We need to download and use NSSM which will help us run the Qlik Sense R-plugin as a windows service.

- ✓ Download and unzip the NSSM from   https://nssm.cc/download

✓ Open a command prompt with admin privileges and change the directory to <path-to-nssm>\nssm-2.24\win64.
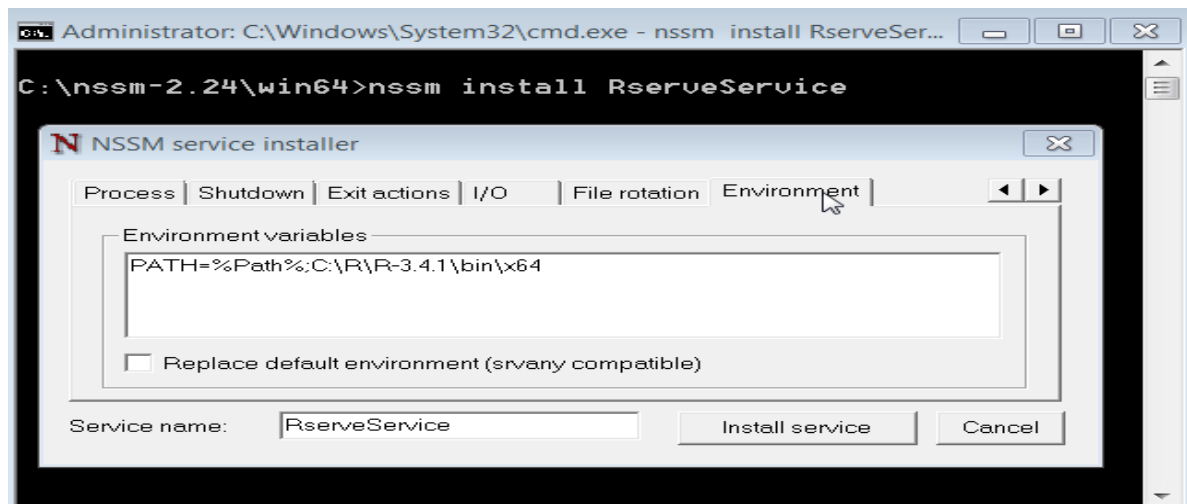

3.2 Install two new services:

✓ Now we need to install 2 new services.

3.2.1 Services 1:

✓ In the command prompt, enter "install RserveService"

✓ A new pop up opens up

✓ Enter <directory>\Rserve.exe in Path and set "Startup directory" to the directory Rserve.exe is in.

✓ Next go to the Environment tab and enter PATH=%Path%;C:\R\R-3.4.4\bin\x64
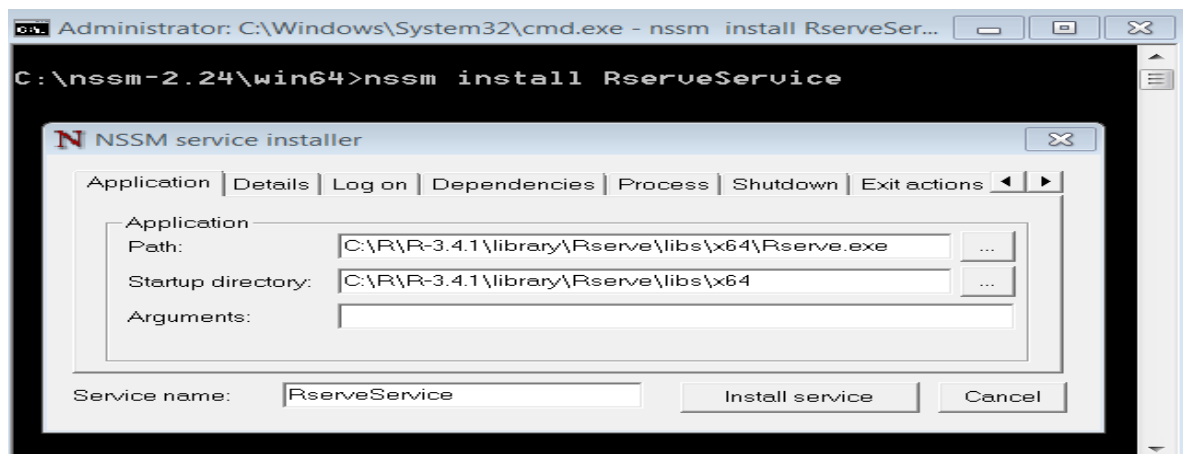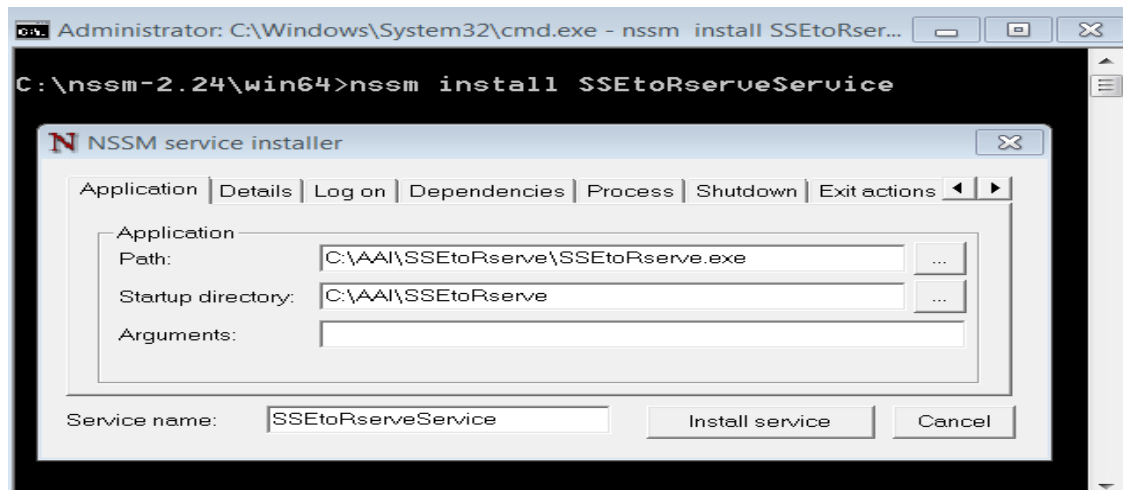
✓ Now click Install service

3.2.2 Services 2:

Next, we need to install a service for SSEtoRserve.exe.

✓ So, again, at the command prompt enter "nssm install SSEtoRserveService", and then enter <directory>\SSEtoRserve.exe into "Path", and set "Startup directory" to the directory SSEtoRserve.exe is in. Now click "Install service".

3.3 Set the qlik sense engine service to depend:

✓ Now that the two services are installed, we can set the Qlik Sense Engine Service to depend on them, so that any time the Qlik Sense Engine Service starts, these services will be available.

✓ In the command prompt enter "nssm edit QlikSenseEngineService".

✓ Go to the "Dependencies" tab and add RserveService and SSEtoRserveService, each on their own new lines under the already existing QlikSenseRepositoryService.
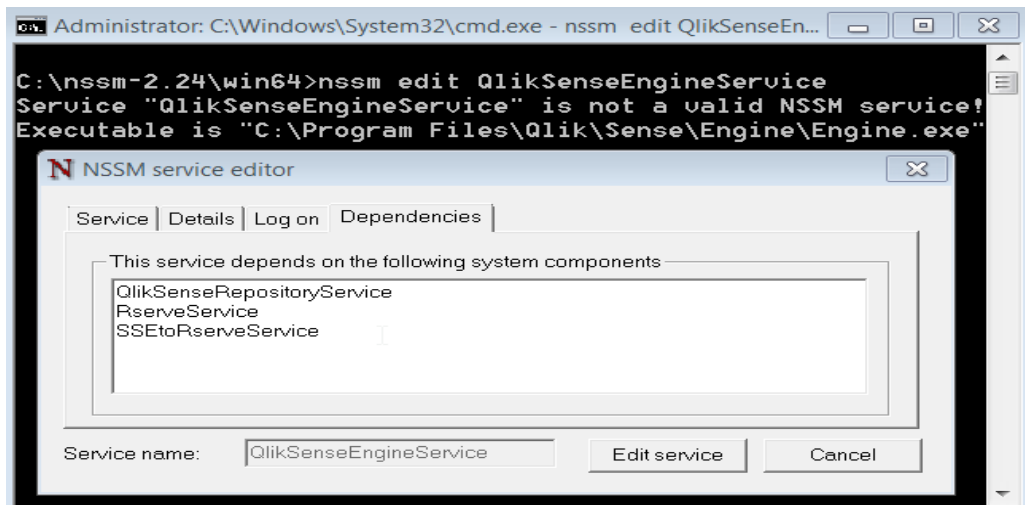

4. Restarting Qlik Sense Engine Service:

✓ Once SSEtoRserve is running, we need to restart the Qlik Sense Engine service.

✓ Go to local service and click on Qlik Sense Engine service.

✓ Right click and Restart the service.

✓ Once the service is running, you are good to go.

5. Open Qlik Sense apps to check if it is accepting Rscripts:

✓ Open the Air Passengers demo app that we have imported through QMC or copied into apps for the Qlik sense Desktop.

Air Passengers (Time Series Decomposition)
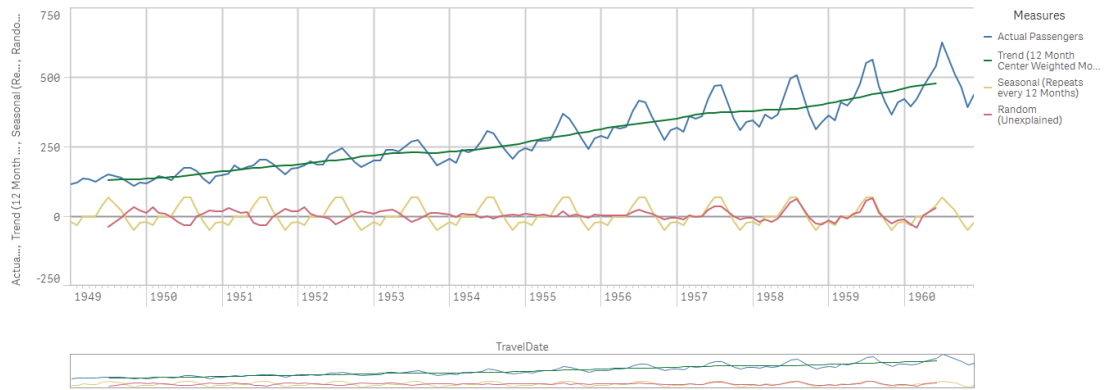
- ✓ You can see that now the chart is not faded out.

- ✓ In the measures you can see the usage of RScripts.

Edit expression

```
1  R.ScriptEval('library(dplyr);newdata<-ts(q$Passengers,start=1,frequency=12);(decompose(newdata)$trend);',
2  Sum(Passengers) as Passengers)
```

- ✓ Now we can see the Qlik sense app is successfully able to call out to R, Objects containing expressions that call out to R are also correctly displayed.

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