Benefits:

• Connects third party analysis engines directly to Qlik Sense
• Reduces efforts importing and exporting data manually - streamlines the analytics process
• Enhance existing analytics platform investments
• Increase analytical access to a wider community

Understanding the QIX Engine

1. User interacts with an app through selection or search, refining context
2. QIX updates data for advanced analytics and stores in-memory
3. In-context data and script are sent to external engine
4. External engine runs calculations and sends results to QIX
5. QIX combines results with existing in-memory data
6. Combined data set is immediately visualized for the user
**R** is an open-source software package licensed under the GNU General Public License (GPL)

For more information on R and to obtain the latest version, visit The Comprehensive R Archive Networks web page at:

https://cran.r-project.org/

**SSEtoRserve** an open-source Server-Side Extension released under the MIT License

For more information see the GitHub page:
https://github.com/qlik-oss/sse-r-plugin

The connector, SSEtoRServe, and Rserve must be running to communicate with R

Access the Qlik Community site to investigate 3rd party manager programs:
https://community.qlik.com/blogs/qlikviewdesignblog/2017/07/07/automatically-start-the-r-plugin

Customize functions and security to suit your particular needs
Access the support documentation on GitHub to learn more about these advanced configuration options:
https://github.com/qlik-oss/sse-r-plugin/blob/master/GetStarted.md#defining-and-using-your-own-functions

**Python** is an open-source programming language released under the Python Software Foundation License (PSFL)

For more information on Python and to obtain the latest version, visit Python Foundation's web page at:
https://www.python.org/downloads/

**Python** Server-Side Extension and scripts

For more information see the GitHub page:
https://github.com/qlik-oss/server-side-extension
https://github.com/qlik-oss/server-side-extension/tree/master/examples/python

Full script access is available within Qlik Sense if desired
Access the support documentation for the full script support:
https://github.com/qlik-oss/server-side-extension/tree/master/examples/python/fullscriptsupport

Customize virtual environments to suit your particular needs
Access the support documentation to learn more about these advanced configuration options:
**Name of the extension to 3rd party application**

Function that says “Take this text and pass it to the R engine for evaluation”

1st line of R script – loads a needed library

2nd line of R script – extracts the seasonal trend component from time series data

Data to pass from Qlik Sense as “in parameter”

R.ScriptEval('library(TTR);decompose(ts(q$sumBirthsPerMonth, frequency=12, start=c(1946,1)))$seasonal', Sum([Births per month]) as sumBirthsPerMonth)

---

**Eight Base Functions**

**Scalar Functions**
- ScriptEval()
- ScriptEvalStr()
- ScriptEvalEx()
- ScriptEvalExStr()

**Importance of Data Types**
- Numerical Input and Output
- String Input and Output
- Dual Input and Numerical Output
- Dual Input and String Output

**Aggregation Functions**
- ScriptAggr()
- ScriptAggrStr()
- ScriptAggrEx()
- ScriptAggrExStr()

For more examples, please see the GitHub page for the SSEtoRserve connector

Understanding Serialization

Request → Bundled Rows → Rows

- Dual{numData: 7, strData: 'Seven'}, Dual{numData: 6, strData: 'Six'}
- Dual{numData: 8, strData: 'Eight'}, Dual{numData: 3, strData: 'Three'}
- Dual{numData: 2, strData: 'Two'}, Dual{numData: 5, strData: 'Five'}
- Dual{numData: 1, strData: 'One'}, Dual{numData: 6, strData: 'Six'}
- Dual{numData: 8, strData: 'Eight'}, Dual{numData: 5, strData: 'Five'}
- Dual{numData: 4, strData: 'Four'}, Dual{numData: 5, strData: 'Five'}
- Dual{numData: 7, strData: 'Seven'}, Dual{numData: 8, strData: 'Eight'}
- Dual{numData: 3, strData: 'Three'}, Dual{numData: 2, strData: 'Two'}
- Dual{numData: 10, strData: 'Ten'}, Dual{numData: 6, strData: 'Six'}