

DATA ANALYTICS

# Expand the Boundaries of Data Discovery

Qlik Sense® APIs

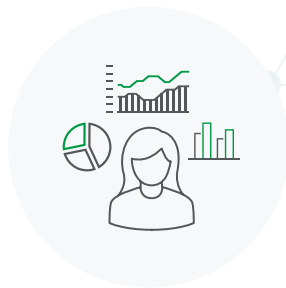


## INTRODUCTION

Qlik Sense gives all your people the power to freely explore all your data and make the discoveries that lead to change. Extend their growing data literacy — the ability to read, work with, analyze and argue with data — beyond the Qlik® environment. Qlik Sense APIs give you the flexibility to build, extend, and combine Qlik Sense with other key tools and technologies integral to users' work:



Integrate Qlik Sense into your web or .NET applications



Extend Qlik Sense by adding your own visualizations and data sources



Easily manage your expansion, licensing users and Qlik Sense server tasks programmatically



Qlik Sense visualizations embedded in a complete web CRM application. Application shows Qlik Sense visualizations seamlessly integrated into the CRM workflow.

# Spread Discoveries Through Web Technology

Qlik Sense APIs let you share the knowledge displayed in your Qlik Sense visualizations by embedding them into web pages or applications built using web technologies. It's as simple as writing a single line of JavaScript® code or HTML.

Unlike many business intelligence tools, Qlik Sense offers complete web integration. The APIs enable data to be freely exchanged between Qlik Sense and your web application, which means your developers can build true mashups with Google Maps, D3, or other web services and libraries. Selections and data from Qlik Sense visualizations can be easily passed back to the web application.

Users experience embedded Qlik Sense visualizations in the same way as when they use Qlik Sense on the desktop: Zoom, move around, or select data on visualizations. Charts have the same interactivity. Making selections in one visualization will automatically update all other visualizations in the same application.

Because of the unique level of integration offered by the APIs, Qlik partners have integrated Qlik Sense with Salesforce and other web-based business applications.



## API Technologies

To create the new Qlik Sense APIs, we use modern languages, styles, and libraries.



## Web Technologies

Internally, Qlik Sense makes significant use of standard web technologies such as JSON, jQuery®, RequireJS, and Angular. Most of the APIs are written in JavaScript. All this makes building applications with the JavaScript-based APIs very straightforward for web developers. It also means the APIs work very well with modern web technologies and JavaScript libraries like D3.



## Desktop Technologies

For desktop related tasks like integrating Qlik Sense into Microsoft® Windows® applications, creating new connectors for custom data sources, and server-related tasks, we use APIs based on the Microsoft .NET framework.

## Bring Greater Data Literacy to Desktop Apps

Using the .NET SDK, developers can embed Qlik Sense visualizations into desktop applications written using the Microsoft® .NET framework. Users will see just one seamless application.

The .NET SDK enables data and control information to be easily shared between Qlik Sense and the application. For example, selections and data from Qlik Sense visualizations can be sent back to a .NET application for processing.



Developers can integrate Qlik Sense into applications written in any .NET language, for example Visual Basic or C#. We have partners integrating Qlik Sense into desktop applications such as Microsoft Office.

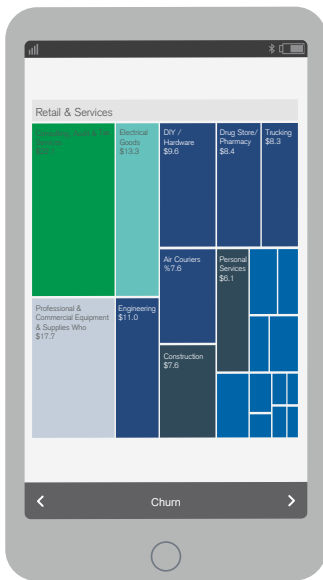
## Data Literacy: See More, Learn More

Using the Extensions API, developers can create their own visualizations beyond the rich array offered in Qlik Sense. The Extensions API is written in JavaScript and is built using modern web technologies, so developers can use standard web libraries like D3 or Angular to create additional visualizations.

Qlik Sense lists these visualizations alongside those that are built-into Qlik Sense. Users drag and drop all visualizations into applications in the same way.

Visualizations built using the Extensions API can be easily shared within an organization and beyond. An extensive open-source community <https://developer.qlik.com> has created hundreds of freely available visualization add-ons for Qlik Sense, including radar charts, Gantt charts, Sankey diagrams and more.





## Find the Value in All Your Data Sources

Qlik Sense offers a large number of connectors that give you access to sources such as ODBC, Salesforce®, and SAP®; however, you may have sources that are unique to your business. The QlikView® Extension (QVX) SDK is a .NET-based API that enables your developers to build their own connectors to these data sources.

QVX connectors are high performance and easy to develop. Launched as a separate process when a user wants to retrieve data, the QVX connector responds to data requests from Qlik Sense, retrieves the data from the data source, and streams the formatted data back to the Qlik Sense application.

QVX connectors appear as first-class connectors in the Qlik Sense load script editor; application developers can choose them in the same way as any other connectors. QVX connectors can be easily distributed within the organization or externally.

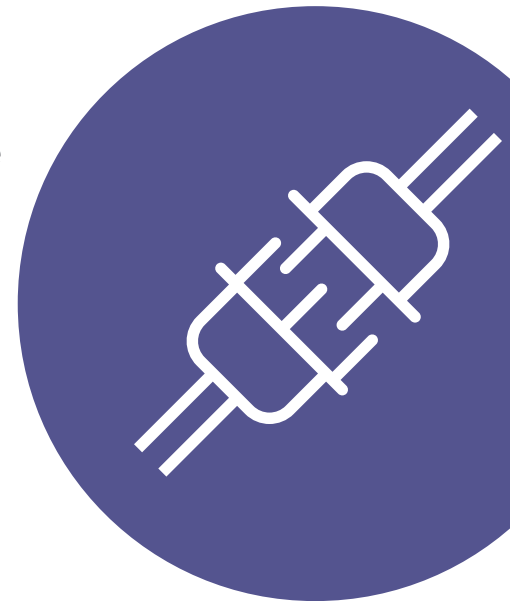
## Stay in Control While you Transform

Most Qlik Sense implementations are network-based, which involves serving applications and licenses from the Qlik Sense Server. Server functionality can be controlled programmatically via several of our APIs; for example:

- Add, delete, or modify users and their permissions
- Set rules about which user groups can access which applications
- Control user authentication
- Start tasks from an external scheduler

Using the Qlik Associative Engine and other APIs, it's possible to go beyond managing just the Qlik Sense-based system — even as far as building a completely new Qlik Sense client, if desired.

Qlik Sense APIs are designed to make the exploration of your data as extensive, complete and powerful as possible so you make the discoveries that lead to real business transformation.



# The APIs



## Extensions

Integrates new visualizations and features into Qlik Sense. Written in JavaScript



## Backend

A helper API for Extensions and Mashups; Written in JavaScript



## Mashups

Merges Qlik Sense visualizations into web applications or web pages. Written in JavaScript



## .NET SDK

Combines Qlik Sense with Windows desktop software. Written in .NET



## QVX SDK

Connects Qlik Sense to new and custom data sources. Written in .NET



## Qlik Engine

Controls and specifies how data is passed between the client and the server; Websocket protocol based



## Proxy Service

Controls authentication, sessions, and load management. Written in .NET



## Repository Service

Governs data and configuration information for a site. A REST API



## User Directory Connector

Imports users and groups into the Qlik Sense Server. Written in .NET

## Finding out more

To see a demo of our APIs, contact us at [qlik.com/us/contact-us](https://qlik.com/us/contact-us)



## About Qlik

Qlik's vision is a data-literate world, where everyone can use data and analytics to improve decision-making and solve their most challenging problems. Our cloud-based Qlik Active Intelligence Platform delivers end-to-end, real-time data integration and analytics cloud solutions to close the gaps between data, insights and action. By transforming data into Active Intelligence, businesses can drive better decisions, improve revenue and profitability, and optimize customer relationships.

[qlik.com](https://qlik.com)