

Advanced Analytics Integration

Qlik® and advanced analytics

Many organizations are making significant investments in data science and advanced analytics. These investments support a number of use cases such as sales forecasting, fraud detection, inventory optimization, market basket analysis, pricing optimization, and many more. However, a large percentage of these companies are not seeing the value of these investments realized widely across their organizations. While “big ticket” decisions tend to be centralized, many smaller decisions made in operating areas could greatly benefit from the power of advanced analytics.

In order to get the most out of advanced analytics investments, organizations should consider not only the data scientists who build models and what types of tools they use, but also how these models will be delivered to business users who make decisions. It’s not enough to provide static output that is pre-computed based on known questions – users need a means to interact with and explore the results of advanced models based on their unique situations.

Qlik Sense® is our next-generation product for self-service oriented analytics, offering unique and powerful data visualization, exploration, and collaboration capabilities for all types of users. QlikView® is our first-generation product for guided analytics applications and dashboards. Both products are built on the proven and patented Qlik Associative Engine, which allows users of all skill levels to interactively explore and search information, without the limitations of query-based tools. This associative technology makes Qlik products the ideal vehicle to deliver advanced analytics to large groups of business users across an organization.

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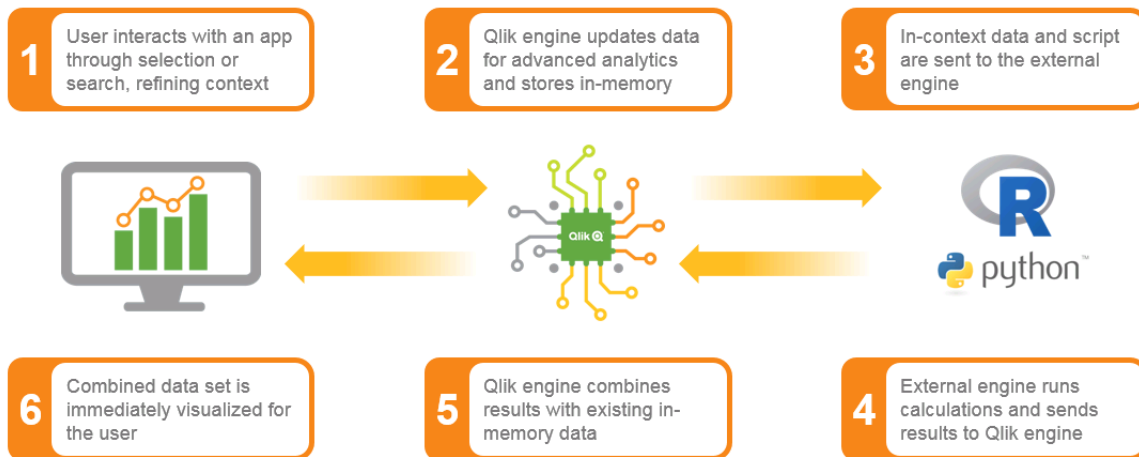
Advanced analytics integration in Qlik Sense and QlikView allows users to interact with and explore advanced calculations from third-party engines such as R, Python, Matlab, Spark, etc. As users make selections, data is sent from the Qlik engine to third party tools, calculations are made in realtime, and the results are returned and immediately visualized for the user. This allows people to ask their own questions and spot insights that would have been missed with query-based or batch approaches.

With open APIs, connectors can be built for any external engines, supporting many types of business specific use cases. For R and Python, Qlik has delivered open-source connectors, which are now supported by the community. This aligns with how R and Python themselves are supported (these are both open source tools). We expect the community to enhance these and contribute other connectors for additional integrations.



How it works

Advanced analytics integration in Qlik Sense happens in real-time as the user explores information, unless there is a specific need for a batch approach (in which case it can run during the data load process). When a user 'clicks', several steps take place. First, Qlik's associative engine determines associations as it typically would, updating the data set for advanced analytics to the new context and storing it in memory. Next, the reduced, in-context data set and any relevant script are sent to the advanced analytics engine. The advanced engine runs calculations and sends the resulting data back to the Qlik Engine. Last, the resulting data is combined with the existing in-memory data and immediately visualized for the user.



The Associative Difference™

Qlik's associative technology frees users and organizations from the limitations of query based tools. Users can easily bring together all their data and explore it without boundaries or restrictions, using simple searches and selections. After each click, our patented associative engine dynamically recalculates all analytics to the current context and highlights relationships in the data for the user, providing speed-of-thought feedback every time a new question is asked.

In traditional batch approaches for deploying advanced analytics models, there is uncertainty about what data is needed for a given business situation. Because of this, developers build complex data structures and generally send too much data to third-party engines for processing. Masses of permutations are pre-computed and loaded in batch, most of which are never utilized. Performance is typically slow and users get limited views of information.

The Qlik associative engine exchanges information with advanced analytics engines in a real-time fashion, as the user explores. After each click, the Qlik engine sends only a small set of rows and columns to the third-party engine, specific to the context defined by the user. Calculations are therefore made quickly, and results are passed back where they are visualized immediately. And this process is repeated every time the user makes additional selections or changes context. The resulting experience is super-fast and practical, and allows business users to explore and interrogate advanced models to expose key insights.

