

ANALYTICS

Modern, Action-Oriented Analytics

Qlik Sense®

INTRODUCTION

Qlik Sense delivers best-in-class cloud analytics that empower people of all skill levels to make data-driven decisions and take action.



Today's markets move fast and turn on a dime. To succeed, organizations have to get in front of events as they unfold. But traditional business intelligence isn't designed to optimize real-time decision-making or trigger immediate action. What it can do – analyze historical datasets to understand performance – is still a critical function. But now more than ever, you need to capture value in the business moment.

Our vision at Qlik® is Active Intelligence: a state of continuous intelligence in which real-time, up-to-date data triggers immediate action. In BI and analytics, this means taking people beyond the dashboard with capabilities that deliver the right insight at the right moment.

Built on our unique Associative Analytics Engine, Qlik Sense offers industry-leading augmented analytics and action-oriented capabilities for the full range of users and use cases — from visualization and dashboards to natural language analytics, advanced and predictive analytics, custom and embedded analytics, mobile analytics, reporting and alerting. It augments and enhances human intuition with AI (artificial intelligence) and AutoML (automated machine learning) capabilities that deepen insight and broaden access, and helps people move from passive BI to Active Intelligence for real-time collaboration and action. And you get unmatched calculation performance, robust data integration, application automation, and the convenience of SaaS with hybrid multi-cloud capabilities for the most demanding enterprises.

With Qlik Sense, users and organizations can accelerate business value in new ways. They can more rapidly respond to events and trends in their business. They can adapt strategy, processes, and even products on a moment-to-moment basis. And they can collaborate in new ways around data. All of which adds up to better outcomes across the board.

Purpose-Built for Analytics

Qlik Sense delivers a unique and powerful analytics experience for everyone, in all areas of your business. It is designed to promote human intuition and data literacy for users of all skill levels, allowing people to easily explore information and quickly gain trusted insights to take action and solve problems – from the simple ones to the most complex.

Associative Exploration

User exploration in Qlik Sense is unmatched. Users can freely ask questions using simple interactive selections and search. Our engine instantly responds with answers after each click, recalculating all analytics to the new context and highlighting both associated and unrelated data through easy-to-understand color cues. No boundaries. No restrictions. Your people are empowered to follow their own paths to discovery, uncovering blind spots that would be overlooked with query-based tools.

In addition, Smart Search provides an intelligent navigation experience unlike any other analytics solution. Search across your entire application and data set to refine context and make discoveries. Qlik Sense not only reveals individual matches, but also the possible combinations in your data, allowing you to apply multiple selections directly through search.

THE ASSOCIATIVE DIFFERENCE®

Relational databases and SQL are rigid structures designed in the 1980s for transactional systems, not modern analytics. Analytics tools that rely on query-based approaches struggle to combine data sources, support interactive user exploration, and retain performance and flexibility at scale.

With unique associative technology, our purpose-built analytics engine enables users of all skill levels to explore their data freely without limitations. It brings together unlimited combinations of data, achieving a “many-to-many full outer join” without leaving any data behind. It offers unprecedented freedom of exploration through interactive selections and search, instantly recalculating all analytics and revealing data relationships as you click. By keeping all visualizations in context together and retaining both associated and unrelated data values, our engine helps you discover hidden insights that query-based tools would simply miss.

Our engine calculates analytics as fast as you can think, using a full set of record-level data, scaling to massive data volumes and large numbers of users. This unique engine technology is our primary advantage, with more than 20 years of innovation and investment.

Data Discovery

Best-in-class visualization and discovery is always at your fingertips. Users can create and explore through a simplified authoring experience, with assistance from Insight Advisor to accelerate the creation process. Data sources can be easily connected together with data profiling and combination suggestions. Charts are created through intuitive drag-and-drop, with easy access to data tables, fields, filtering, and properties, and chart assistance that suggests the right types of visualizations based on the data being used. Over 30 smart, fully responsive visualizations provide a beautiful experience and feature innovative techniques to summarize data shape, highlight patterns and hotspots, and pinpoint outliers. Geospatial analysis and mapping, based on Qlik GeoAnalytics® technology provides advanced geographic visualization and calculation. And with our unique analytics engine, Qlik offers the most flexible and interactive dashboards on the market, supporting free-form exploration and search not possible with query-based tools.

With Qlik Sense, you can support all your information delivery needs, providing reports on a scheduled or routine basis in addition to interactive analytics. Self-service reporting in Qlik Sense allows users to subscribe to entire sheets and individual analytics for scheduled .PDF delivery on a routine basis. Chart monitoring is also available in the hub and mobile app, for fast updates on key analytics. And users can manually print and export data, analytics, and stories to PDF, Microsoft PowerPoint and Excel for easy sharing.

Qlik Reporting Service supports bursted report distribution, enabling your organization to create, manage and deliver reports using data and analytics from Qlik Sense. Reports are available in PDF format, using data from multiple apps. Loop and reduce data with specific field values to create cycled reports for different audiences. Automate report tasks using report blocks and templates from Qlik Application Automation, or directly integrate with third party systems through the Qlik Reporting API. Reports can be distributed through multiple channels including email, Amazon S3, Google Cloud Storage, Dropbox and SharePoint.

Real-Time Data Pipeline

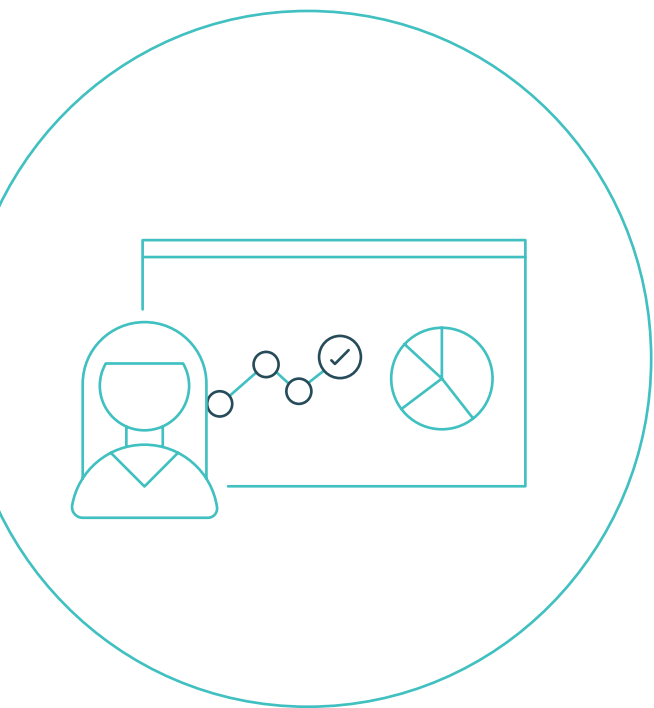
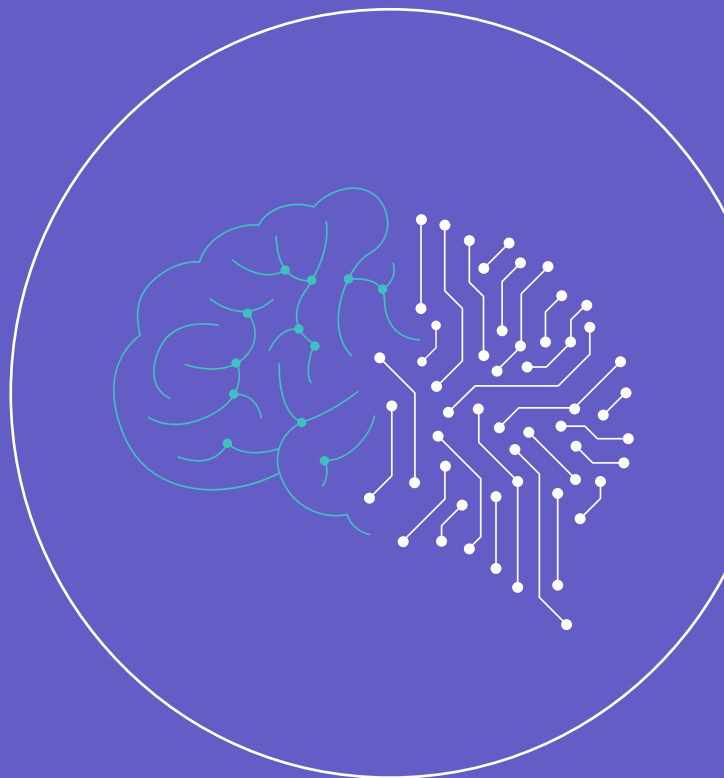
The Qlik Associative Engine allows near limitless combinations of data, without the challenges and limitations of using SQL joins. And, Qlik Sense provides a complete set of data preparation and integration capabilities, including graphical data preparation and robust scripting. Qlik Sense offers an enterprise data catalog for easy access to governed data sources, a broad set of connectors to on-premises and cloud-based sources, and direct query capabilities to compliment in-memory analysis.

Underpinning this, Qlik Data Integration delivers a real-time data pipeline based on unique change data capture (CDC) technology that identifies and moves just the changes in source data sets as they occur, without putting stress on source systems, supporting Active Intelligence. Changes in data are flowed directly into Qlik Sense data files (.QVD) and made immediately available for analytics.

AUGMENTED ANALYTICS

At Qlik, we believe that AI should work in combination with human intuition, not replace it. Our approach is different from “one-size-fits-all” tools or bolt-on AI — we combine our unique associative technology with AI and machine learning built into our platform at a foundational level. The result is true Augmented Analytics that enhance the ability of people to interact with data, generate insights, and make the best possible decisions.

Insight Advisor is your intelligent, AI assistant in Qlik Sense – providing auto-generated analyses and insights, automating tasks, and supporting natural-language interaction. Qlik AutoML provides machine learning and predictive analytics specifically designed for analytics users and teams. And with advanced analytics integration, you can deliver the power of data science directly to business decision makers, with real-time exploration.



Data Literacy Through AI

AI helps your people understand and use data in more effective ways to find every possible edge. With combined AI and associative technology, Qlik Sense empowers users of all skill levels to do more with data.

Advanced Insight Generation

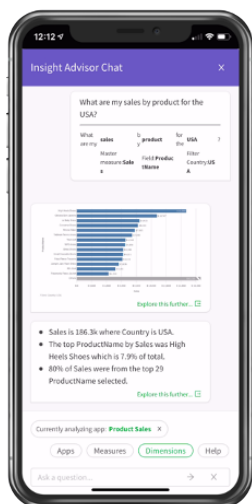
Insight Advisor in Qlik Sense delivers a full range of augmented analytics capabilities, driven by combined associative and cognitive technology. It offers AI-generated analyses and insights, automates the creation and data preparation process, supports natural language interaction, and delivers advanced analytics for users to explore.

Users can request a variety of advanced analysis types, including comparison, ranking, trending, clustering, correlation, period-over-period, forecasts and more. Insight Advisor will offer guidance for choosing the right data, and will generate data visualizations, narrative interpretations, and even entire sheets and dashboards for exploration. It features a robust business logic layer for customization of insight generation and precedent-based learning to make insight suggestions more relevant and impactful over time. With unique context awareness, Insight Advisor offers insights that closely align with user perspective and intuition.

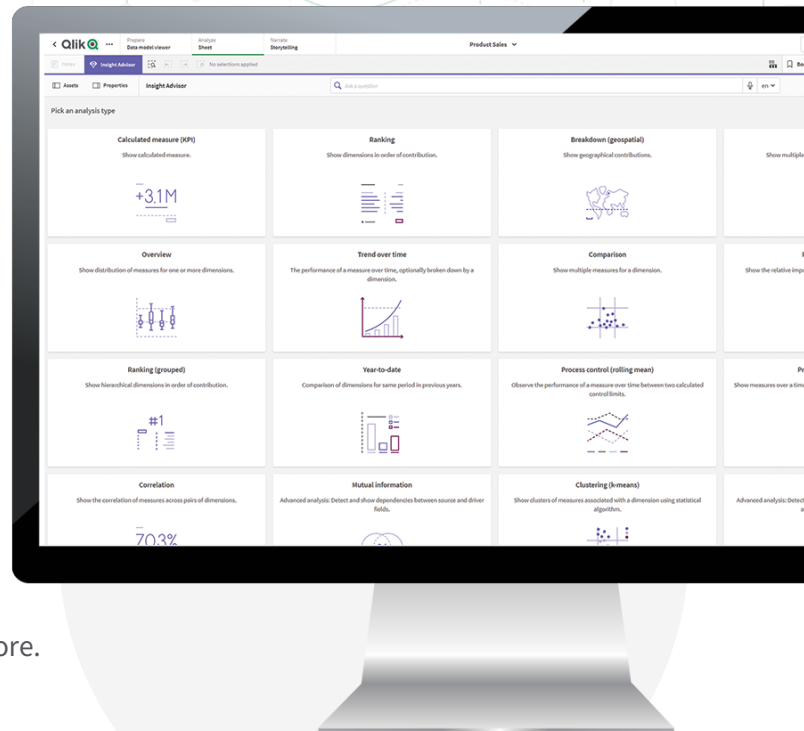
Associative Insights take AI to the next level, directly combining the power of our associative and cognitive technologies to suggest the most significant excluded values for users to explore. Our engine identifies data values unrelated to user selections (gray values), and Insight Advisor analyzes these values to assess potential impact and offer suggestions about the most significant areas to explore.

Natural Language Analytics

Insight Advisor supports natural language in Qlik Sense across multiple user experiences including search-based discovery and fully conversational analytics. Search-based discovery allows users to more easily generate new analyses and insights based on natural language search, extending the power of insight creation to more people. It provides auto-generated analyses and insights based on NLP (Natural Language Processing). Users can make edits and adjustments to visualizations and directly add them to dashboards for further exploration. And users get natural language interpretations (NLG) for further context and data literacy.

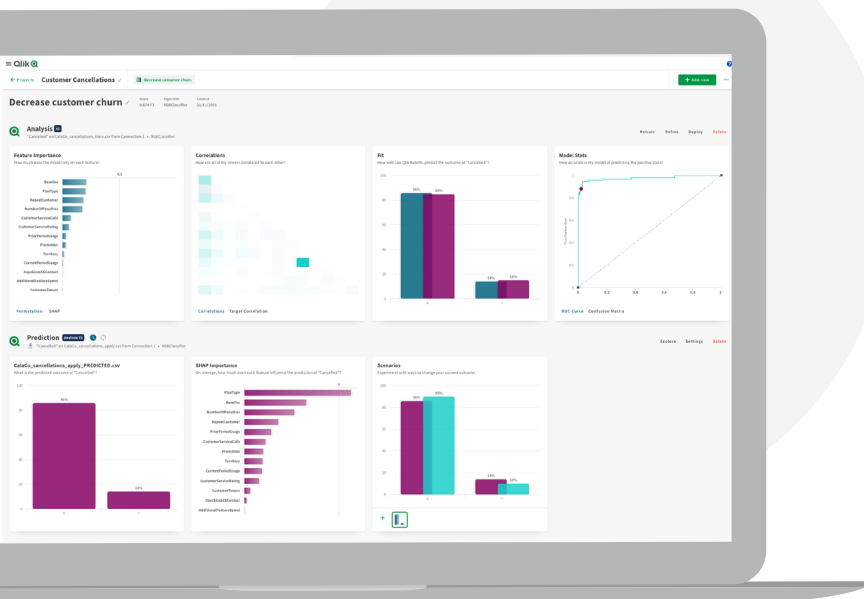


Conversational Analytics enables users to ask questions and get answers in a natural, conversational manner, without having to be data experts, enhancing their data literacy. And organizations can drive adoption, spreading the power of analytics and data driven decisions to far more people than ever before. Insight Advisor Chat provides a fully conversational, natural language interface across multiple apps. Natural Language Processing (NLP) understands user intent, and Natural Language Generation (NLG) delivers added insight and perspective for a deeper understanding of your question. Insights include auto-generated charts, narrative insights, key



observations and more. Users can easily interact to get answers to their follow-up questions, and link directly to visual discovery, in context, for deeper analysis and insight.

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Predictive Analytics

Qlik AutoML (automated machine learning) allows analytics users and teams to easily generate machine learning models, make predictions, and plan decisions– all within an intuitive, code-free user interface. It easily connects and profiles data, identifies key drivers in the dataset, and generates and refines models. You can then make future predictions and test what-if scenarios. Results are returned with prediction influencer data (Shapley

values) at the record-level, allowing you understand why predictions were made – which is critical to making the best decisions and taking the right actions. Predictive data can be easily published into Qlik Sense and other cloud platforms, and models can be integrated using advanced analytics integration for real-time exploratory analysis.

And with Advanced Analytics Integration, you get real-time exploration of calculations from Qlik AutoML and data science models within Qlik Sense. Direct, engine-level data exchange with third party data science tools through open APIs deliver new calculations as the user clicks, allows people to refine context and evaluate the results interactively and visually. We offer native connectors for Amazon and Comprehend, Azure ML, DataRobot, and connectivity for custom solutions built in languages such as R and Python. With this, users can interactively explore predictive calculations from advanced and predictive models, delivering the power of data science directly to business decision makers.

From Passive BI to Active Intelligence

Qlik's vision is a state of continuous intelligence where technology and processes support the triggering of immediate action from real-time, up-to-date data – what we call Active Intelligence. For BI and analytics, this means taking people beyond the dashboard, with action-oriented capabilities that deliver the right insight at the time and place of decision. Active Intelligence capabilities include intelligent alerting, search and conversational analytics, collaboration, mobility, embedded analytics, application automation and more. And of course, it needs to be supported by an intelligent analytics data pipeline that can deliver a continuous flow of up-to-date data, from all your data sources.

Inform the Decision

When making decisions, it's critical to capture and share the context you need to accurately inform decisions, from your data, people, and other systems. Collaborative notes in Qlik Sense allow users to capture and harness the critical human context needed for the best business outcomes, both individually and in teams. People can add narrative to analytics, and drive discussions to interact with others around data. Collaborative notes in Qlik Sense are independent artifacts that can include multiple analytics and serve as an independent record for decisions.

In addition, interactive data storytelling facilitates live meetings and presentations.

Users can create slides with analytics and insights, in a linear story, with graphical content and text commentary. With direct, in-context linking to analytics apps, users can dive directly into live analytics for immediate answers to follow-up questions as they arise in discussion.

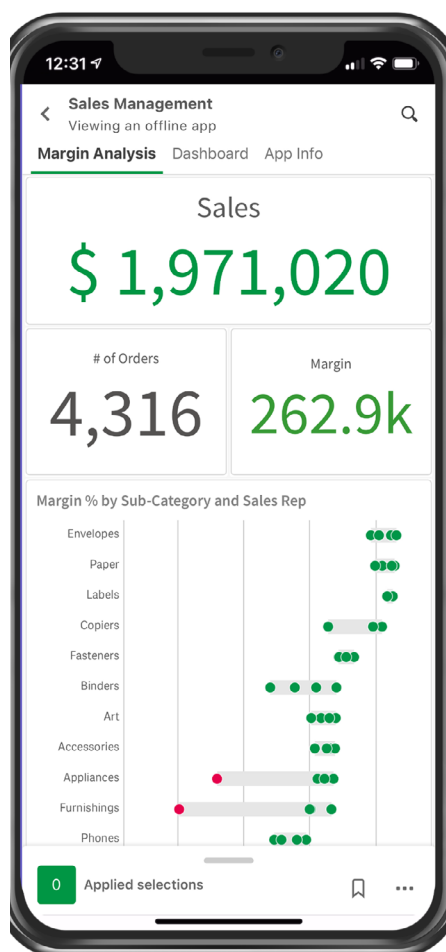
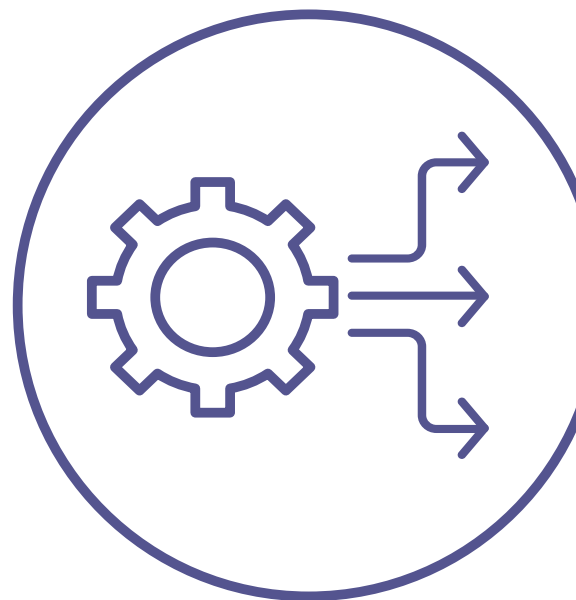
And, organizations can build, integrate, and extend analytics to leverage functionality and deliver insight and context from third-party tools and technologies. Qlik Sense provides a complete set of open APIs allowing creation of custom analytics and extensions, either custom developed or leveraging third-party tools and technologies, using industry standard development skills.

Beyond the Dashboard

To deliver analytics at the time and place of decision, you must go beyond the dashboard to where and how people work. Qlik Sense delivers unmatched analytical power on mobile devices. It is inherently mobile, delivering a complete set of analytics capabilities within an optimized cloud user experience on any device. Unlike other products, users can explore, create, and collaborate on mobile devices, without



boundaries or limitations. Our touch-based web client provides intuitive operation, and responsive design intelligently adapts visualizations, data, and functionality to create the best possible experience for the device. Users can seamlessly transition across devices, with sessions retained so they can pick up where they left off. They can access natural language features to generate new analytics and ask questions conversationally. And with no additional effort to mobilize analytics, organizations benefit from a build anywhere consume anywhere approach.



Qlik Sense Mobile is our fully native app for iOS and Android that provides an enhanced user experience, fully interactive online and offline analysis, and integrated push alerting to drive action at the point of decision. It delivers Qlik Sense analytics in the best form for mobile consumption, such as a single object mode for navigation, an intuitive selections bar, and a mobile collection in the hub. With the Qlik Associative Engine running on-device, it supports fully interactive online and offline exploration allowing mobile workers to answer un-anticipated questions in any environment. And it features integrated alerting with push notification, so users can be notified of important changes in their data and respond in real-time.

In addition to mobile, embedded analytics allow organizations to extend the reach of analytics to more internal employees and the broader ecosystem of customers and partners, where and how they work. Qlik Sense provides a complete set of open APIs, allowing analytics to be rapidly embedded in workflows and operational apps, using industry standard development skills. A complete set of APIs offer access to the full set of capabilities in the Qlik Sense platform, for a complete and powerful embedding experience. And, the power of the Qlik Associative Engine is fully available in embedded analytics, delivering a fully interactive set of in-app analytics that respond to selections at the speed of thought and work together to reflect a unified context.

Trigger the Action

Qlik Sense is built to drive action based on changing data, helping you capture the moment by triggering action when it is needed. This includes both human action and automated events, all driven by a real-time data pipeline.

To prompt human action, Qlik Sense delivers powerful, data-driven alerts with sophisticated alert criteria, notifying users of potential issues and allowing them to immediately take action. Intelligent data alerting notifies users of changes, trends, and outliers in data, through statistical evaluation of new data against thresholds, comparisons between measures, condition and/or logic, and the ability to trigger alerts based on individual dimension values. Qlik Sense supports both self-service and centralized alerting, and alerts can be delivered through customizable emails, our web interface, and mobile push notifications on the Qlik Sense mobile app. With alerting, more people can proactively monitor their business, spot trends and outliers, and take timely action based on changing data.

In addition, you can trigger automated events and workflows in Qlik Sense and downstream applications, based on changing data. Using application automation, Qlik Sense users can build workflows that trigger event-driven actions through a visual, no-code environment. Automations can be triggered without human intervention based on changing data. Connectors are available to connect to a broad array of cloud applications in addition to Qlik Sense analytics. With application automation, organizations can trigger action in Qlik Sense and downstream systems without the need for human involvement.

Both of these action-oriented capabilities are supported by Qlik's robust data integration platform, featuring hybrid data delivery for real-time data updates, driven by unique change data capture technology. Hybrid Data Delivery moves data in real-time from sources into Qlik Sense data repositories, all managed through a simple graphical interface that completely automates end-to-end replication. This means your Qlik Sense applications are always up-to-date, and you can realize the value of analytics on data in motion as well as data at rest.

High Performance SaaS and Hybrid Multi-Cloud

Qlik Sense is available on Qlik Cloud, a cloud platform for the enterprise and beyond, supporting organizations of all sizes with unmatched performance and flexibility. It features full enterprise SaaS deployment, built on a modern, containerized architecture, with hybrid multi-cloud options available for your data and analytics. At Qlik, we do not limit customers to any particular cloud, and instead support combinations of public, private cloud, and on-premises sites as needed.



Your organization can deploy modern analytics, including self-service, without having to make trade-offs when it comes to governance and trust. Qlik Cloud features a modern hub with governed content areas that allow people to easily find and share analytics. Our modern management capabilities provide a single point of control for all areas of the system. Flexible security and dynamic data reduction ensure that information is accurate and secure. And our unique analytics engine delivers unmatched flexibility and calculation speed when scaled to high numbers of users and large, complex data sets. Your organization gets the performance and governance it needs to maximize adoption and value.

Product Editions

Qlik Sense is available in multiple editions supporting the varied needs of our customers. We offer business and enterprise editions, with professional and analyzer user types for content creators and information consumers. We also provide options for expanded data capacities and value-added capabilities as needed.

For more information, please visit qlik.com/pricing.



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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 does business in more than 100 countries and serves over 38,000 active customers around the world.

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