News since Qlik Sense 1.0

Qlik Sense®
May 2024
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1 What's new in Qlik Sense May 2024

This section provides Qlik Sense business users, analytic creators, and data integrators a summary of the features and improvements available in Qlik Sense Enterprise on Windows.

> *Qlik Sense administrators should review the What's New section in the Qlik Sense for Administrators documentation set.*
>
> *Qlik Sense developers should review the What's New section in the Qlik Sense for Developers documentation set.*

1.1 Data and platform

Preload apps functionality

Available now in Qlik Sense is the ability for customers to configure and schedule the preloading of apps! This has been a highly requested feature and rightfully so, customers can improve their end-users experience by making datasets nearly immediately available within an application (especially useful for larger apps) upon utilizing the preload functionality.

To make the management of these tasks intuitive and seamless, within the Qlik Management Console you will now find new Support options for the following: Preload Tasks: Create, Edit & Delete.

Creating preload tasks

Support LOAD and STORE of Parquet files with nested data

Qlik associative engine now includes support for loading and storing to nested fields with a parquet file. This support is available when loading and string data using Qlik Sense and the script editor.

Working with Apache Parquet files

1.2 Visualizations and dashboards

Background color opacity

The color picker gets an opacity control! By adding this feature, we are making it easier to adjust the transparency of the color with the new addition and option to utilize slider functionality. Here are some use cases that you may find this feature very useful:

- Allow the sheet background to shine and make a statement along with the data you're showing!

- Add more elegance to stacked charts

For those of you who will stick to hex codes, don't worry – we made that easier too! Moving forward, you'll be able to paste your codes with or without the "#" symbol.

Button enhancements

The following navigation enhancement has been added to the Button: "Go to Sheet: specify chart".

Check out some of the bulleted use cases below where this will come in handy:

- Navigating to a specific chart
- Single page design
- Jump to Section
- Back to top

The button also gets a new setting so expressions can be evaluated in runtime. This allows for values set in an action to be carried forward to future actions in the chain.

Button

Adding a button to navigate to a sheet with a specific chart highlighted

Table improvements

We continue to improve on the new Straight table and Pivot table because they are not only classics, but they're also favorites!

Straight Table:

- Smaller columns
- URL links

Pivot Table:

- Dimension limits
- Measure formatting
- Text alignment, dimension and measures values and titles
- Null value styling measures
- URL links

And finally, you now have the options to display values as clickable links within dimension columns, for both the Straight table and the Pivot table!

Straight table (Visualization bundle)

Pivot table (Visualization bundle)

Sheet navigation buttons moved

When hiding the sheet title, the sheet navigation buttons will be available in the selection bar instead of being hidden.

Hiding the toolbar and header in sheets

1.3 Connectors

SAP ODP connector

Qlik Sense provides multiple methods of capturing data from your SAP system. This release enhances existing capture methods with support for SAP ODP. The ODP connector provides connectivity to the SAP ODP framework, enabling data capture from multiple types of data artifacts such as Extractors, CDS views, BW objects, and SAP HANA Information views.

SAP ODP connector

2 What's new in Qlik Sense February 2024

This section provides Qlik Sense business users, analytic creators, and data integrators a summary of the features and improvements available in Qlik Sense Enterprise on Windows.

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2.1 Visualizations and dashboards

Data window functions in engine load script

Customers can now perform complex calculations on their data tables in the Qlik load script to perform aggregation on different partitions without losing the granularity of their data.

This functionality is commonly used in SQL and with many ML data preparation use cases.

Window functions

- Window - script function
- WRank - script function

New pivot table

The new Pivot table is here with a set of new features:

- Dimension headers
- Null value custom symbol, foreground and background color
- Grid styling with width and color
- Font styling for size, color and family for headers and cell contents
- Totals styling and placement options: above or below
- Column width options, set to auto, in pixels or with percentage
- Scrollbars outside chart
- Interactive sort of dimensions

All of the above are designed and added based on feedback from our users. The new Pivot table is launched in the Visualization bundle and will replace native pivot next year when additional features are added.

Pivot table (Visualization bundle)

Layout container

The Layout container is a new component in the Dashboard bundle. In the Layout container, charts can be placed in a freeform manner with or without a snapping grid. Charts can overlap, be stacked, and controlled with show conditions. The Layout container is highly versatile but especially useful for:

- Grouping charts together
- Combining charts into new visualizations
- Creating composite KPIs
- Grouping and reusing user controls and buttons
- Creating aesthetic pleasing dashboards

To get the most out the layout container, follow best practices, check out Bruno Calver's talk at Techspert Visualization Day on Qlik Community.

Layout container (Dashboard bundle)

Layout container

Styling Grid, Funnel & Sankey charts

The Grid chart, Funnel chart, and the Sankey chart have been upgraded with the new property panel for styling. The styling includes general settings for title, subtitle, footnote, background, border and shadow and chart specific settings for axis and value labels.

Grid chart (Visualization bundle)

Funnel chart (Visualization bundle)

Sankey chart (Visualization bundle)

Filter pane styling

The Filter pane now gets more properties for styling: General settings for title font styling, background, border and shadow. Chart specific styling for header and content font styling, color settings for selection state, background color and image.

Filter pane

Styling a filter pane

Borders and shadows

As of today, most charts receive settings for borders and shadows. Charts inherit the border setting from the theme but the border width and color setting can now be overridden and customized per chart. The border can play a big role in how your dashboard is perceived, use it wisely to achieve your goals.

Chart shadow is a new property on charts, providing a shadow contour around the chart, with options for size and color. Shadows create a depth effect and can be used to highlight and make certain elements stand out.

Borders and shadows works very well in the Layout container where charts can overlap and be stacked.

Customizing the borders and the shadows of visualizations

Copy and paste style

You now have a new menu choice for copying style settings from one chart to another. This quality of life improvement makes it easier to style and work with charts. Especially now when all charts has many more styling settings.

Applying custom styling to a visualization

3 What's new in Qlik Sense November 2023

This section provides Qlik Sense business users, analytic creators, and data integrators a summary of the features and improvements available in Qlik Sense Enterprise on Windows.

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>
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3.1 Visualizations and dashboards

New text object extension

A new flexible text object is now available via the Dashboard bundle. You can now style text with advanced settings, add measures, and also insert tables.

Text object (Dashboard bundle)

Updated Natural Language Insights object

The Natural Language Insights object has been updated to offer better functionality, improved insights, and native support for all Qlik Cloud features.

In addition to manually configuring the context with dimensions and measures, you can now directly select a desired chart and insights will automatically reflect it, providing an easy way to add readouts and interpretations for a visualization.

The object now fully supports the Qlik Cloud UI in multiple languages, accessibility requirements, and reporting / exporting, and has been moved to the standard charts pane.

With Natural Language Insights, you can boost data literacy by helping users better understand the most important takeaways from their visualizations and analytics, driving better decisions at all levels.

NL Insights

Improved font handling

The handling of fonts has been improved. You now a get a preview of the font in the drop down. Open-source fonts are bundled, so that fonts are rendered the same everywhere: on screen, in printing and in image downloads.

Old dashboards will still look the same, new fonts are only engaged if the app developer is actively going in and changing. You can use your own fonts, make a custom theme and include your font.

Line object

The new line object gives users the ability to draw simple lines on sheets to add more customization and detail to sheets. The line object can be used to separate or group content within a sheet and to create bespoke dashboards. It also includes several customization capabilities, including the ability to adjust the design, width and color of the lines.

Line

Data window functions in engine load script

Customers can now perform complex calculations on their data tables in the Qlik load script to perform aggregation on different partitions without losing the granularity of their data.

This functionality is commonly used in SQL and with many ML data preparation use cases.

Window functions

- Window - script function
- WRank - script function

Downloading as image for straight table in Visualization bundle

Essential for usability of the new Nebula-based straight table, you can now take snapshots, download as an image, download as a PDF, monitor in the hub, and subscribe.

Straight table (Visualization bundle)

Styling for KPIs

More styling options are now available for the KPI Object, which include Name and Value labels. Adding flexibility and customization, options include font family, color, and style (bold, underline, italicize).

KPI

Hide or show measures in a line chart based on conditions

New line chart options have been added, allowing application developers to enable toggling across different dimensions or measures within the same chart. The ability to add a simple toggle switch using the show condition expression gives developers more control, improves customization, and saves space. Users will appreciate significant time savings with the ability to toggle across the variables associated with their line chart data.

Line chart

New filter pane settings

The filter pane now has a setting to opt out confirmation, which is especially nice if in grid mode and the filter pane act as a button bar.

Filter pane

4 What's new in Qlik Sense August 2023

This section provides Qlik Sense business users, analytic creators, and data integrators a summary of the features and improvements available in Qlik Sense Enterprise on Windows.

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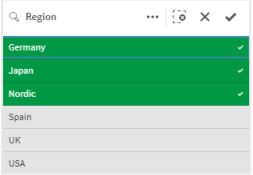
4.1 Visualizations and dashboards

New chart hover and selection designs

Providing better customization, we have re-designed the look of chart hover menus and selections, enhancing chart rendering with new visual styling options.

Germany, Japan, and Nordic selected in the Region filter pane.



App developers can hide the toolbar and sheet header in apps

New app styling settings in App options allow you to turn the toolbar and sheet header on or off for all sheets. Turning the toolbar and/or sheet header off provides more space for content and allows you to customize selections for titles and the navigation bar.

Hide or show measures in a bar chart based on conditions

New bar chart options have been added, allowing app developers to enable toggling across different dimensions or measures within the same chart. The ability to add a simple toggle switch using the show condition expression gives developers more control, improves customization, and saves space. Users will appreciate significant time savings with the ability to toggle across the variables associated with their bar chart data.

Styling improvements to charts

New styling improvements are available for several Qlik Sense charts, giving app developers more customization options when building visualizations, allowing them to conform to company, department, or personal style standards and preferences.

New content for styling visualizations

The Qlik Sense documentation has been updated with new content detailing how to style text, customize the background, and adjust other properties in visualizations. Content has been added for all visualizations supporting newly added customization options.

4.2 Insight Advisor

New visibility into app enablement status in the hub

When natural language capabilities (Insight Advisor Search and Chat) are enabled for an app, we now show a notification banner with the enablement status of the app. This helps customers know when apps are ready to support search, so they do not try to access the feature before indexing is complete.

4.3 Data sources

Apache Parquet files are now supported as Qlik Sense data source

Apache Parquet is a columnar storage format, highly efficient for storing and querying large datasets. In Qlik Sense on Windows, you can read data from Parquet files, and store tables as Parquet files. Using Parquet allows for efficient querying of specific columns in a table rather than reading the entire table. This makes it well-suited for use with big data processing. Also, Parquet supports efficient compression and encoding of data which can further reduce storage space and improve query performance.

4.4 Connectors

Twitter connector is temporarily unavailable

The connector for Twitter was deprecated after Twitter changed the structure for the available API access levels and removed the broader access to analytics via Twitter API v1.1. Twitter API v2 is now required, which is not supported in the current connector for Twitter. A new connector for Twitter is intended to be released later this year.

For more details, see Qlik Analytics connectors: Twitter connector to be updated in the Qlik Support Community.

5 What's new in Qlik Sense May 2023

This section provides Qlik Sense business users, analytic creators, and data integrators a summary of the features and improvements available in Qlik Sense Enterprise on Windows.

> *Qlik Sense administrators should review the What's New section in the Qlik Sense for Administrators documentation set.*
>
> *Qlik Sense developers should review the What's New section in the Qlik Sense for Developers documentation set.*

5.1 Visualizations and dashboards

New customization options for filter panes

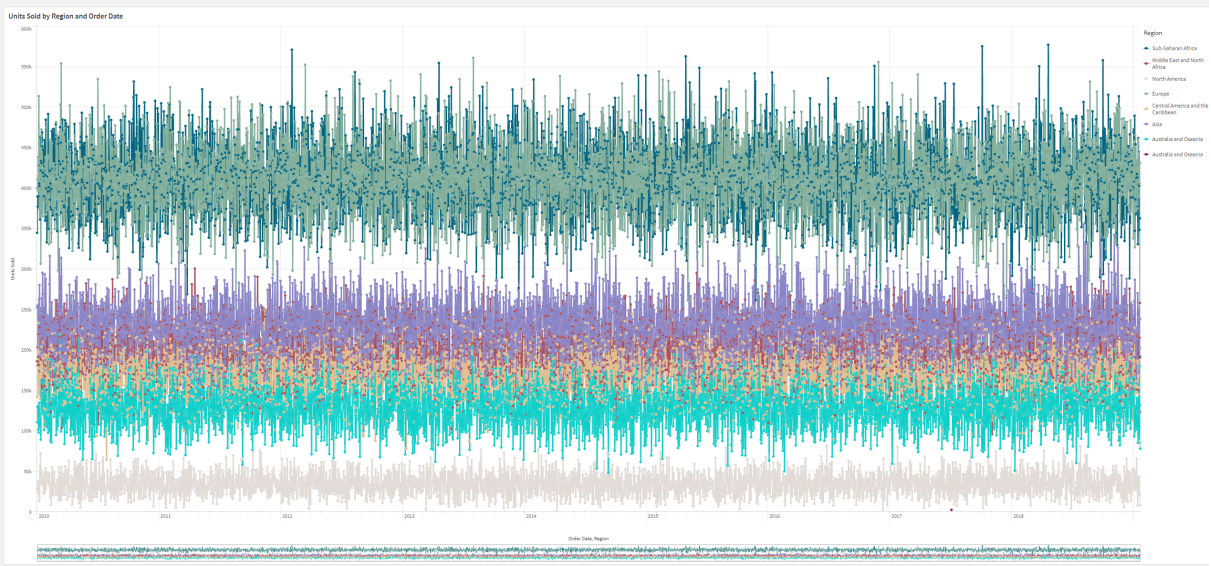
App developers now have new ways to customize the appearance and functionality of filter panes. The listbox for each field or master dimension in a filter pane can be customized individually with multiple new properties. The following options are available:

- Hide the displayed title of the field.
- Remove search functionality for the field, or switch to **Wildcard** mode (inserts * characters around string).
- Compact view for optimizing space between values.
- Checkbox mode for alternative selection method.
- Histogram view to display the frequency of each value in the data.
- Grid layout with custom ordering and display options.

Line charts can display larger datasets

App developers can now control the number of visible points and lines displayed in line charts. The maximum for visible points is 50,000. The maximum for visible lines is 1,000. These options are available for line charts with a continuous dimension axis.

A line chart with a large data set. This chart is set to display a maximum of 50 lines and 20,000 data points.



Add background colors and images to charts

App developers can now add a custom background color or image to straight tables, pivot charts, pie charts, and bar charts. Any image in the media library can be used as a background. You can choose a single background color or color by expression.

Create personalized straight tables with chart exploration

In the Visualization bundle, the new straight table significantly boosts self-service capabilities with chart exploration. It acts as a catch-all table, providing app consumers with the flexibility to pick and choose how they would like their table presented.

App creators can add many fields simultaneously, customize the table at the column-level, add alternative dimensions and measures, set column width, apply pagination, and turn on chart exploration.

Chart exploration allows users that do not have edit rights to customize the original straight table when they are in analysis mode. These users can add or remove columns, change sort order, re-arrange columns, and make selections. They can then share, download, subscribe to, or bookmark the new table layout. The changes made in chart exploration mode by a user are not seen by other users working in the same sheet. It is very helpful in apps that have many viewers with different needs.

Straight table (Visualization bundle)

Using chart exploration

Chart exploration in a straight table in analysis mode.

5.2 Advanced authoring

New chart functions for custom app navigation

The new chart functions `ObjectId()` and `InObject()` enable creation of guided applications with custom navigation functionality. For example, you can use the functions in conditional expressions to create colored buttons to navigate between sheets in an app.

The functions give access to the hierarchy of objects in a Qlik Sense app. `ObjectId()` will return the ID of the object in which the expression is evaluated. The function takes one optional string parameter, which can specify the type of the object you're looking for. `ObjectId('sheet')` will return the ID for the sheet of the expression. `InObject(ID)` is true when evaluated inside an object with the specified ID.

5.3 Connectors

New Google Analytics 4 connector

The Google Analytics 4 connector extracts traffic and engagement metrics from your Google Analytics 4-enabled websites and apps and loads that data into your Qlik Sense apps.

Google is replacing Universal Analytics with Google Analytics 4. For more information about this change, see Google Analytics Help.

6 What's new in Qlik Sense February 2023

This section provides Qlik Sense business users, analytic creators, and data integrators a summary of the features and improvements available in Qlik Sense Enterprise on Windows.

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6.1 Augmented analytics

Add natural language insights to sheets

NL Insights is a new Dashboard bundle control that displays natural language insights about selected dimensions and measures. This allows app developers to effectively share insights about data with their app consumers. Insights includes analyses based on the data selected. App developers can remove unwanted analyses if needed.

6.2 Visualizations and dashboards

New styling panel for visualizations

App developers can now style the font used for titles, subtitles, and footnotes, giving them more options for customizing their visualizations. A new General tab provides options to change the font type, size, color, and emphasis. The Chart tab controls styling of rows, scrollbars, and custom headers.

Scatter plots can display larger datasets

You can now control the number of visible bubbles displayed in scatter plots you create. Scatter plots can be set to display up to 50,000 data points. If there are more than 5,000 visible bubbles, then bubble labels and out of bound bubbles are not shown.

New sheet grid and sheet background options

Sheets can now have custom background images and colors, allowing you to divide your sheet into sections, add images from your media library, and more. You can set a background color using the color picker, or by expression.

App developers now have more control over object placement and sheet grid size to support advanced formatting for presentations.

Show gradual changes with chart animations

Chart animations are the gradual transitions in a visualization from the old view to the new view when data has been changed, for example, after a selection has been made. Animations can be turned on or off under app settings, in unpublished apps.

Animations can be controlled in the following chart types:

- Bar charts
- Bullet charts
- Combo charts
- Line charts
- Pie charts
- Scatter plots
- Funnel charts (Visualization bundle)
- Grid charts (Visualization bundle)
- Sankey charts (Visualization bundle)

6.3 Connectors

New ServiceNow ODBC Connector

You can now access data stored in ServiceNow. The new ServiceNow connector allows you to include ServiceNow data, such as incidents, requests, and case records within your analysis. The new connector includes security options such as OAuth or SSL to ensure that only authorized users can access this data.

New Amazon S3 connectors with enhanced security

Qlik Cloud has two new connectors: Amazon S3 Metadata V2 and Amazon S3 V2 Web storage provider. These connectors are more secure because they use the Amazon S3 API to access your Amazon S3 metadata, such as the names of files and subfolders in your Amazon S3 bucket. Previous versions of these connectors used the REST API. For now, the initial release of the Amazon S3 connectors V2 and the existing Amazon S3 connectors have the same capabilities. However, new capabilities will only be added to the V2 connectors going forward.

At some point in the future, the previous Amazon S3 connectors will no longer be supported.

7 What's new in Qlik Sense November 2022

This section provides Qlik Sense business users, analytic creators, and data integrators a summary of the features and improvements available in Qlik Sense Enterprise on Windows.

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7.1 Augmented analytics

Auto-generate an analysis using Insight Advisor Analysis Types

Let Insight Advisor auto-generate your analysis, complete with visualizations, narrative readouts, even entire sheets. Choose the type of analysis from a variety of available options, such as comparison, ranking, trending and more. Select your data with guidance from Insight Advisor, and then let Insight Advisor generate the rest. Edit the analysis and add it to dashboards for further exploration. With Analysis Types, Insight Advisor supports multiple paths to insight including auto-analysis when you select fields, natural language search, and now auto-generating the analysis when you select an analysis type, for a more directive approach.

Example questions in Insight Advisor

App creators can now provide example questions in Insight Advisor within the business logic layer of an app. This allows them to customize the questions to their specific analytic content, and thereby help users learn how to use natural language. When users ask questions, the examples appear in a drop-down menu from which users can select, modify, and submit the question. In Insight Advisor Chat, example questions from across your apps will be available.

Insight Advisor Search

Insight Advisor Search provides an improved Insight Advisor experience in-app, allowing users to easily auto-generate the most relevant analyses and insights from their data. A new **Discovery** button opens Insight Advisor, where users can select fields and generate insights without having to navigate away from their current sheet. The new **Ask Insight Advisor** search box is now visible at all times within dashboards, allowing users to easily generate insights using natural language processing. Auto-generated visualizations and analyses can be refined and added directly to dashboards for further exploration.

Improvement to Insight Advisor Chat's support for follow-up questions

Insight Advisor Chat improves support for follow-up questions with the **Explore this further** option. The option takes you directly to search-based discovery within apps for deeper analysis. When you ask follow up questions to an original question and select **Explore this further**, the app opens with the selections applied for the full line of questioning, allowing you to continue visually where you left off conversationally.

7.2 Visualizations and dashboards

Custom tooltips for KPIs

App developers can add custom tooltips to KPIs. Previously, tooltips could not be added to objects without dimensions.

New sub-toolbar

Navigate quickly and use the tools that you need in the redesigned navigation bar and toolbar in Qlik Sense.

New distribution functions from Cephes library

The following distribution functions from the Cephes library have been added, allowing you to perform more advanced statistical analysis of simulations.

List of distribution functions

These distribution functions can be used in both the data load script and in chart expressions.

Font styling with map charts

App developers can now style the font used for titles, subtitles, and footnotes in map charts, giving them more options for customizing their visualizations.

You also now have the option to customize font properties (family, size, and color) for labels in several types of map layers. This applies to point, area, chart, and line layers.

7.3 Connectors

ODBC database connector performance increase

ODBC data sources have increased performance when working with larger datasets. All new connections automatically use the Bulk Reader feature.

Instead of loading data row by row, the Bulk Reader works with larger portions of data in the iterations within a load. This can result in faster load times for larger datasets. To activate this feature in existing connections, open the connection properties window by selecting **Edit** and then click **Save**. No other connection properties need to be changed.

Update to MongoDB connector

The MongoDB connector in Qlik Sense Client-Managed has been improved with new security features. You can now use SCRAM-SHA-256 and LDAP authentication options when defining your MongoDB connection.

Qlik Web Connectors included in Qlik Sense Enterprise Client-Managed

The following Qlik Web Connectors are now available in Qlik Sense Enterprise on Windows without the need for Qlik Web Connectors to be separately installed: Facebook Insights, Google Ads, Google Calendar, Google Search Console, Outlook 365, Mailbox IMAP, Microsoft Dynamics CRM V2, OData, Qualtrics, SMTP, SurveyMonkey, and YouTube Analytics.

7.4 Data and platform

Improvements to navigation in the hub

Certain options in the Qlik Sense Enterprise hub have been re-arranged for a better user experience. The user profile icon has been moved to the top right corner in the toolbar. Clicking on this icon will open up the global menu with the following options:

- **Profile**: Click the icon at the top of the menu to view your user ID and directory.
- **Client authentication**: A Qlik Sense administrator can allow users to authenticate their client against Qlik Sense. This item is not enabled by default. For more information, see Configuring client authentication.
- **Dev Hub**: To learn more, see Dev Hub.
- **About**: Access your license agreement, version information, and third-party software information.
- **Help**: Redirects to Qlik help documentation for your Qlik Sense version.
- **Privacy Policy:** Learn more about how Qlik manages privacy in its products.
- **Log in**: If you are using Qlik Sense as an anonymous user, you can log into your account.

  This option will only be available if your administrator has allowed users to use the Qlik Sense deployment anonymously. For more information, see Anonymous authentication.
- **Log out**: If you have logged into your account, use this option to log out.

7.5 Documentation improvements and additions

Updates to scripting topics

Scripting topics covering date and time functions, number interpretation, and scripting prefixes have been improved. Qlik Cloud Help has added new examples to the documentation.

List of updated help topics

To test sample load scripts and chart expressions, see:

8 What's new in Qlik Sense August 2022

This section provides Qlik Sense business users, analytic creators, and data integrators a summary of the features and improvements available in Qlik Sense Enterprise on Windows.

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8.1 Augmented analytics

Insight Advisor is no longer available with Qlik Sense Desktop

Insight Advisor, including business logic, is no longer supported with Qlik Sense Desktop. In November 2022, Insight Advisor will be upgraded to a new experience. This will only be available on Qlik Sense Enterprise on Windows. Users who want to continue using Insight Advisor and Business Logic on Qlik Sense Desktop should not upgrade to August 2022.

Chart level scripting

Chart level scripting is a powerful feature that allows you to modify the dynamic dataset behind a chart using a subset of the Qlik scripting language, with techniques such as variables and loops. You can add or modify rows and columns that were not in the original dataset. This allows for calculations in chart expressions that were previously not possible, such as simulations or goal-seeking.

8.2 Visualizations and dashboards

Styling panel for bar and pie charts

App developers can now style the font used for titles, subtitles, and footnotes in bar and pie charts, giving them more options for customizing their visualizations. A new General tab provides options to change the font type, size, color, and emphasis. The Chart tab controls styling of the bars in the bar chart and the styling of slices in pie charts.

New chart and script functions to support JSON

New functions have been introduced to support the testing, validation, and modification of JSON (JavaScript Object Notation) data: **IsJson**, **JsonGet**, **JsonSet**.

New inner and outer set expressions in set analysis

Outer set expressions simplify governance of Qlik Sense applications. It is particularly helpful when working with complex master measures that come in different flavors of one base measure.

You can now use set expressions to tweak the base master measure, for example `{<Year={2021}>}[Master Measure]`.

8.3 Connectors

Office 365 SharePoint Metadata Connector supports new tables

The Office 365 SharePoint Metadata connector has been updated to support access to Microsoft SharePoint lists and views. The following new tables can now be loaded in the Data manager or the Data load editor: **Views** and **ItemsFromList**.

Qlik Web Connectors included in Qlik Sense Enterprise Client-Managed

The following Qlik Web Connectors are now available in Qlik Sense Enterprise on Windows in the same way as in Qlik Sense SaaS, without the need for Qlik Web Connectors to be separately installed.

8.4 Documentation improvements and additions

Scripting help improvements

Scripting topics covering date and time functions, number interpretation, and scripting prefixes have been improved. Qlik Sense Help has added new examples to the documentation.

9 What's new in Qlik Sense May 2022

This section provides Qlik Sense business users, analytic creators, and data integrators a summary of the features and improvements available in Qlik Sense Enterprise on Windows.

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9.1 Augmented analytics

Business logic fine grain controls in Insight Advisor

Business Logic allows you to define the default grain for a calendar period, such as a yearly, quarterly or monthly basis. When you create behaviors such as default calendar periods, you can now specify whether to use or ignore the grain for a particular analysis, providing more advanced fine grain controls.

9.2 Visualizations and dashboards

New actions for button object

New actions available with the button object improve the workflow for on-demand apps and dynamic views. App developers can use the button to make interfacing with and transitioning to a new app more user friendly.

Label coloring with map chart

New map settings include options for label coloring, allowing you to customize how labels contrast with the base map or colored areas. Set your map to automatically adjust the label coloring depending on the base map, or select your preferred coloring.

Favorites in the hub

Mark your private or any published apps as favorite for easy access in the hub. Favorite apps are marked with a ★ icon and display in the new **Favorites** section. This section is visible in the hub only when at least one app is marked as a favorite.

Scatterplot now supports regression lines

The redesigned scatterplot chart provides greater flexibility and detail. Scatterplot now supports regression lines, including average, linear, exponential, and logarithmic, as well as second, third, and fourth polynomial. Customize the regression line settings including color and type, vertical or

horizontal fit, and show formula to quickly see the relationship between two variables.

KPI background color and new icons

Now you can add background colors to KPI charts, giving you more flexibility when customizing your visualizations. An extensive array of new icons has also been added to the existing icon set.

Uploading apps with GeoAnalytics extensions to Qlik Cloud

To help customers who are transitioning to Qlik Cloud, there is a 12-month grace period for apps that use GeoAnalytics extensions and have been uploaded to Qlik Cloud from other versions of Qlik Sense. Following the grace period, you can use the map chart in Qlik Cloud, which is faster, easier to use, prints better and includes more features.

9.3 Connectors

Databricks ODBC Connector has OAuth support and improved interface

The Databricks Connector now supports OAuth 2.0 authentication with Databricks on Azure. The support for OAuth also allows single sign-on (SSO) to Databricks when using an identity provider.

The Databricks connection interface has been simplified to include the database properties that apply only to this connector.

Qlik Web Connectors included in Qlik Sense Enterprise Client-Managed

The Qlik Web Storage Provider Connectors are now available in Qlik Sense Enterprise on Windows in the same way as in Qlik Sense SaaS. The corresponding metadata connectors are also integrated, without the need for Qlik Web Connectors to be separately installed. These connectors allow you to connect to file-based data stored on a web storage provider, either by browsing for folders and files directly in the interface, or using the separate metadata connectors listing the structures and objects in tables. The web storage provider platforms supported are Amazon S3, Azure Storage, Dropbox, Google Cloud Storage, Google Drive, Office 365 SharePoint, and OneDrive.

Support for uploading Oracle Wallets

The Qlik Oracle Connector now provides additional security capabilities with support for uploading an Oracle Wallet file. Oracle Wallets are containers that store authentication credentials, private keys, certificates, and more. This allows organizations to easily enforce security rules based on defined user privileges contained in an Oracle Wallet. The Qlik Oracle Connector can now access Oracle Wallets through a TLS-encrypted communication channel.

Self-service task management—Create, edit, and delete reload tasks in the hub

New capabilities in the hub allow users with the appropriate permissions to create, edit, and delete reload tasks and scheduled triggers.

This feature is released under the feature flag "HUB_CREATE_EDIT_DELETE_TASK", and is disabled (set to false) by default.

10 What's new in Qlik Sense February 2022

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10.1 Augmented analytics

Period over period dashboards in Insight Advisor

Insight Advisor now returns more robust period over period analyses in the form of entire dashboards, when users select or search for applicable fields. Instead of a simple chart, you get one or more charts and KPIs, along with a filter pane, allowing you to make selections and further explore comparative performance.

Insight Advisor supports dollar-sign expansion

Insight Advisor can now recognize expressions contained in variables and use them when generating analytics. This allows users who manage expressions in variables to generate more relevant insights.

Business logic fine grain controls in Insight Advisor

Business logic allows you to define the default grain for a calendar period, such as a yearly, quarterly or monthly basis. When you create behaviors such as default calendar periods, you can now specify whether to use or ignore the grain for a particular analysis, providing more advanced fine grain controls.

New business logic options for customization in Insight Advisor

New parameters have been added to business logic that help refine the analysis generated by Insight Advisor. Options include setting trend direction and sort order for a measure, specifying favorite types of analyses to be used by the system, and specifying the overall aggregation type for complex expressions.

- Favorable trends: Sets whether the desired trend for a measure is to increase or decrease.
- Favorite: Identifies a measure of interest for Insight Advisor so that Insight Advisor will use the measure more often when generating visualizations without user queries or selections.
- Overall aggregation: Helps Insight Advisor determine which aggregation to use for queries that involve master measures with complex expressions where the aggregation is not clear from the outset.

10.2 Visualizations and dashboards

Improvements to the grid chart

Improvements to the grid chart now let you show labels for each data point in the chart. Labels identify the value of the measure for the data point. In preparation for the deprecation of the Heatmap extension in this release, the grid chart now includes two layouts, **Standard** and the new **Heatmap** option. The heatmap layout adds the functionality of a heatmap chart to the grid chart. As of this release, the Heatmap chart extension will no longer be supported.

Improvements to managing variables

A top request through Ideation, the updated, flexible **Variables** dialog simplifies the management of chart variables. Displaying all variable elements, including name, description, value, and tags, it allows you to add, search, and duplicate variables. You can even delete multiple (up to 20) variables simultaneously. These capabilities alleviate manual work and help teams work more efficiently.

10.3 Connectors

Qlik Sense connector for Google Drive

Qlik Sense connector for Google Drive is included with Qlik Sense Enterprise Client-Managed. Now you can access data stored in Google Drive and load it directly into your Qlik Sense app.

Qlik Web Storage Provider Connectors

Google Drive and Spreadsheets connector

The Qlik connector for Google Drive and Spreadsheets Metadata is now included with Qlik Sense Enterprise Client-Managed.

Snowflake connectivity enhancements

The Snowflake connector now supports the use of key pair authentication to allow you to use enhanced security measures when accessing Snowflake from Qlik Sense.

Support for AWS IAM credentials authorization with Amazon Redshift

New authentication support with the Amazon Redshift connector allows you to use AWS Identity and Access Management (IAM) credentials authorization. This will allow organizations to assign role-based access privileges in addition to designating access rights individually.

10.4 Data and platform

Formatted export to Excel

Formatting options are now supported when exporting straight tables to Excel. Exported tables now include totals and styling as they appear in Qlik Sense.

Add self-service task management

Users with the appropriate permissions can now easily start, stop, and view reload tasks in the hub.

10.5 Documentation improvements and additions

Scripting help improvements

Set expressions tutorial

Learn how to build set expressions for set analysis.

Chart expressions and load scripts

Many new examples of functions used in chart expressions and load scripts.

11 What's new in Qlik Sense November 2021

11.1 Augmented analytics

Custom chart periods

Users can now customize the analysis period used by Insight Advisor. Previously, users would need permissions to change the business logic. Now, users can make these changes on demand, improving their ability to get the insights they need quickly.

Creating visualizations with Insight Advisor

DPS period over period analysis

Users can now compare a change in a measure of the current period versus the previous period by using the period over period analysis. The analysis is applied to a line chart which lets users visualize how a measure differs between two periods of analysis.

Creating visualizations with Insight Advisor

Consistency in accessing fields and master items across Insight Advisor and Insight Advisor Chat

What users can search for and access with the Measure and Dimension buttons with Insight Advisor Chat now depends on if the app is published and if there is a logical model applied to your app.

Making apps available in Insight Advisor Chat

Create custom responses to question

Custom analyses allow you to create custom responses for specific phrases in Insight Advisor. You can define the analysis that will be returned, such as comparison, ranking, and clustering, using specified input fields. This provides improved control over auto-generated analytics without having to define complex rules.

Adding custom analyses to Insight Advisor

11.2 Visualizations

New host for satellite tiles

Due to API changes at our satellite tile provider, the host that is used for fetching satellite background data will change from services.arcgisonline.com to ibasemaps-api.arcgis.com. .

The switch took place on December 7, 2021 and should not be noticeable to most users. However, customers who restrict domains with their firewall will need to allow this new domain after the transition. If your maps are not functioning as expected, contact your Qlik administrator. They might need to allow this new service.

Add charts in tooltips

This release includes further customization of tooltips with the ability to embed a master visualization inside the tooltip. This allows you to visualize an overview first then drill down directly in the chart for details. The embedded chart inherits the state with dimension value in focus selected.

Creating a custom tooltip

Accessibility

Keyboard navigation in view data mode

Straight tables in view data mode have improved keyboard navigation.

View data mode

Layered labels

This release introduces layered labels, giving you greater control and flexibility over the presentation of graphs. In addition to label options like auto, horizontal, and tilted, you can now layer your labels on the X-axis. Layering staggers your labels to make better use of space and provide more room for your graph.

Changing the appearance of a visualization: X-axis and Y-axis

All labels visible in line chart

The line chart labels have been enhanced with a new **All** option, which forces data labels to always remain visible. Additionally, the **Auto** option, which automatically shows labels based on the space available, has been improved to display more labels.

Line chart properties: Appearance

Sizing and positioning of images

You can now add images by URL to rows in straight tables for added context and insight.

Table properties: Data

Edit master items from the property panel

You can now edit master visualizations, master dimensions, and master measures directly from the property panel.

Editing a master visualization

Editing a master dimension

Editing a master measure

Define default tab in container object

The container object lets you add visualizations in a limited space. By default, the first tab is displayed when you view a container. To improve the user experience, you can now set the default tab when creating or editing a container.

Creating a container

11.3 Connectors

Snowflake connectivity enhancements

You can now authenticate using key pairing. It is also possible to override the default role in the connection dialog, and specify any role you have access to.

Create a Snowflake connection

11.4 Platform

Partial reloads for scheduled reloads

You can now use the partial reload option for scheduled reloads in the QMC. Partial reloads have several benefits compared to full reloads:

- Faster, because only data recently changed needs to be loaded. With large data sets the difference is significant.
- Less memory is consumed, because less data is loaded.
- More reliable, because queries to source data run faster, reducing the risk of having network problems.

Editing tasks

NVDA and Chrome screen reader support

The supported configuration is now NVDA screen reader for Microsoft Windows and Google Chrome.

Using Qlik Sense with a screen reader

Improvements to the Qlik Sense Enterprise on Windows installer

The installation flow has been improved. It now also supports:

- Setting the listening port during installation.
- Configuring the QRS connection pool size.

Installing Qlik Sense Enterprise on Windows on a single node

Installing Qlik Sense in a multi-node site

Show license information in QMC when using a signed key

With a signed license key, license information can now be viewed in the QMC.

Site license

Allow for SCRAM encryption

Adding support for SCRAM encryption as part of the QRS.

Database security

12 What's new in Qlik Sense August 2021

12.1 Augmented analytics

Mutual Information Key Driver Analysis

Insight Advisor can now analyze and score the mutual information between fields. This provides a measure of the influence that one field has on another, allowing you to understand which fields are drivers of another target field.

You can also now calculate mutual information between targets and drivers in charts with the MutualInfo function. This allows analysis such as pair-wise mutual information analysis and driver breakdown by value.

12.2 Visualizations

Bars on secondary Axis

Users can now add bars on the secondary axis in a combo chart.

Color per measure

In a combo chart, you can configure each measure to have its own color setting, either a single color or color by expression.

Dark mode base map

A fourth base map type with a dark theme has been added to Map chart options. The dark base map with neutral colors puts the focus on the content and makes light-colored feature layers stand out.

Image by URL in point layer

You can now add an image to a point layer map from a URL. This is in addition to adding images located in the Qlik Cloud media library.

Images in straight table

You can now add URL-based images to straight tables.

13 What's new in Qlik Sense May 2021

13.1 Augmented analytics

Insight Advisor Chat improvements

In this release, we have made several enhancements to Insight Advisor Chat including improved narratives in question responses, a refined UI for question parsing, and more intelligent app selections when responding to questions.

Insight Advisor Search

We have made several improvements to our search-based analysis within Qlik Sense apps, including:

- Analysis of change over time – Insight Advisor will now generate multiple charts for a single analysis type, such as responding with analysis of data between two date periods through a combination of charts.
- Natural language generation (NLG) – Visual charts generated by Insight Advisor Search now have a new option to view narrative insights and interpretations of the data.

13.2 Visualizations

Video player

A new capability to embed and play videos directly in Qlik Sense apps.

Active chart and grid dimensions

Enhanced capabilities added to grid dimensions for your visualizations, which helps better identify chart location and associated dimensions on the design canvas. There is a new indicator on the bottom right side of an object which contains these added dimensions and coordinates when moving or resizing chart objects on your design canvas.

New and improved combo chart

An improved combo chart is now available, with enhanced functionality including support for vertical presentation, reference lines based on measures and dimensions, and line and bar styling.

13.3 Connectors

New Databricks ODBC Connector

To support the growing popularity of Databricks, a Qlik strategic partner, Qlik Sense now includes a pre-configured connector for Databricks, including the new Spark 3.0 engine. Utilizing the Databricks SQL Analytics service, the Databricks Connector enables Qlik Sense users to easily

include data in Databricks to gain a comprehensive view of their business as well as generate new insights and data-driven actions.

New Azure Synapse Connector

Qlik continues to expand the number of data sources that users can directly access by introducing a new connector for Azure Synapse Analytics.

Presto Kerberos support

You can now authenticate the Presto Connector with Kerberos kinit authentication.

13.4 Mobile

Support for Microsoft Edge

Support for Microsoft Edge mobile browser on iOS and Android.

13.5 Platform and administration

Self-service task management

Users now have ability to create and edit tasks as part their hub experience for improved management and scheduling.

Enhanced ODAG performance

ODAG performance enhanced by increasing the maximum concurrent ODAG requests from 10 to 50, making it easier for large user groups to leverage ODAG collectively.

14 What's new in Qlik Sense February 2021

14.1 Augmented analytics

Business logic

Default Analysis Periods: Enables users to specify a default period for analysis when using Insight Advisor, for natural language questions that use terms such as "Month", "Quarter" or "Year".

Business logic tutorial

There is a new tutorial showing how to improve search-based analysis in Insight Advisor using business logic. By customizing the logical model and adding vocabulary, you can improve the experience for search-based analysis.

Normalization for K-means clustering

Enhanced functionality in the K-means clustering function that enables the normalization of data to be selected and controlled by the user.

Insight Advisor Chat

Users now can take advantage of the multi-lingual natural language capabilities running on Qlik Cloud, as a remote service.

14.2 Visualizations

- Grid Chart: A new type of visualization that provides a highly effective means of visualizing measures across two dimensions.
- Hidden sheets: App creators can now show or hide sheets based on conditions, Enables enabling them to target different user groups with the same app by tailoring the experience.
- Master measures in expressions: Allows users to reference master measures within expressions, improving productivity and governance.

14.3 Connectivity

- New ODBC connector for Amazon Athena.
- Updated Teradata ODBC Connector, adding support for multi-domain Single Sign-On.

14.4 Qlik Engine

- Merge command in script: A new “Merge" command in Qlik script that allows changed data to be loaded into a Qlik application without having to reload the entire data model.

- Note: This is only the engine functionality and for commercial use it will need additional functionality to allow "partial reload" to be exposed for scheduled reloads vs. via API.

14.5 Documentation improvements and additions

Improvements for data security and Section Access

Documentation for managing data security with Section Access has been revamped with a new organizational structure to highlight the levels of security through the use of data reduction. A clear explanation of Section Access concepts and more authorization script examples have been added.

15 What's new in Qlik Sense November 2020

15.1 Augmented analytics

Business logic

A robust business logic layer provides the ability to create business rules and metadata to customize and guide the behavior of Insight Advisor when generating insights and interacting conversationally with users. It includes the ability to logically group fields, classify data, specify default behaviors, define preferred relationships, and more. Users can create calendar periods to define how measures should be filtered, aggregated, and compared based on preferred time frames. Natural language processing can also be customized, including defining vocabulary rules and synonyms for more natural interaction.

Insight Advisor Chat

Insight Advisor Chat is our next-generation, fully conversational analytics experience native to Qlik Sense, available in the Qlik Sense hub. It is driven by our cognitive engine and uses natural-language processing and generation (NLP and NLG) to understand user intent and generate both narrative and visual responses to questions. It works across Qlik Sense apps and allows people to transition directly to in-app, search-based visual analysis for deeper exploration. Released in September on SaaS, it is now offered as a licensed, value-added product for Qlik Sense on Windows, replacing Qlik Insight Bot. The Windows version supports integrations with Microsoft Teams and Slack.

K-means Clustering - Expanded Functionality

K-means clustering on-board the Qlik Engine was released in September. This function allows data points to be grouped into clusters based on similarity. It’s a highly useful function for customer segmentation, fraud detection, and many other use cases.

In this release, we have improved our KMeans functions with auto-clustering support. When a user sets 0 for the number of clusters, an optimal number of clusters for that dataset is calculated. This enhancement builds on Qlik's advanced clustering capabilities.

Insight Advisor visualization alternatives

Insight Advisor now offers alternative visualization options for results generated in search-based analysis, helping to ensure your data is displayed in the most useful and meaningful way. In addition, users will have more chart types to choose from when they view alternatives within Insight Advisor analysis.

15.2 Visual analytics and usability improvements

Images in Custom Tooltips

Users can now load custom images in tooltips for more styling options. They can feature an image from the media library or reference one by a URL. This offers further flexibility and enhanced options for app development, as images are a great way to provide additional context when hovering over an object.

Copy sheets between apps

Users can now copy sheets between apps to improve productivity for power users and application developers. This is a highly requested feature from our customer base, as it drives faster insights across the organization.

Copy measures between objects

Another feature to speed app development, users can quickly copy measures between charts. This is a small, but powerful feature enhancement that drives faster insights within an organization.

Other chart improvements

- The ability to hide disclaimers in charts; a user can now decide whether the disclaimer for additional data points should be visible or not.
- Increased measure limit in the Waterfall chart, which now supports 50 measures instead of 15.
- Extended functionality in table mini charts, including `others`, and `null`.

Usability look and feel

A new modern Qlik Sense theme for better-looking apps. It introduces a modern look and feel with clean styling options for color and font selections, ensuring apps have a fresh appeal by default and are consistent with the Qlik brand.

15.3 Platform

Extended app distribution from Qlik Sense Enterprise Client-Managed to SaaS spaces:

- New "Test Connection" button to easily test cloud connections.
- Use of local bearer token when creating new deployment in multi-cloud setup console.
- Improved navigation for app distribution status and policies, now within a cloud distribution section.
- New link to multi-cloud setup console in QMC.

15.4 Mobile

Qlik Sense Client-Managed Mobile updates to support the latest mobile OS releases (iOS14 and Android 11) for Qlik Sense Client-Managed Mobile and Qlik Sense Mobile for BlackBerry.

16 What's new in Qlik Sense September 2020

16.1 Augmented intelligence

New search-based visual analysis chart types

When generating insights in search-based visual analysis, Insight Advisor will now auto-generate several new types of visualizations. These include:

- Cluster Chart – Shows clusters using the new k-means clustering function.
- Correlation Chart – Shows correlations using the correlation function.
- Control Chart – Shows how a process changes over time.

Search-based visual analysis on mobile devices

Search-based visual insight generation is now available on handheld mobile devices. This provides a more intuitive means of creating new analytics and insights on small form factors, as opposed to traditional authoring. It is available on handheld devices through the browser-based user interface.

Advanced analytics calculation - K-means clustering

With this release, advanced analytics calculations on-board the Qlik Associative Engine are being introduced. The first function available is k-means clustering - allowing data points to be grouped into clusters based on similarity. This is a highly useful function for customer segmentation, fraud detection, and many other use cases.

16.2 Visual analytics improvements

Improved reference lines

Bar and line charts now include dimension based (vertical) reference lines with formatted labels, useful for enhancing charts with added detail along a time axis (such as start and end dates of important events)

Animator control

The Animator control gives users the ability to animate changing data over time by auto-selecting values in any dimension and playing them in a loop, with or without aggregation.

Other chart improvements

- Number formatting of master measures
- Turn on and off borders in containers
- Custom sorting in Sankey Chart
- Frequency counts in filter pane

- WMS (web map service) layer opacity
- Hover icons toggle

16.3 Administration improvements

App distribution

QSEoW now supports app distribution from a multi-node deployment into a Qlik Sense Enterprise SaaS tenant.

QMC status page

The status page offers a better way to understand and monitor app distributions, such as showing the user a link to their Multi-Cloud Setup Console.

Self-service hub improvements

Table view in the hub presents a scalable and easy to use app manager. The following features are included:

- Columns for name, description, owner, published (when applicable), Data last reloaded (when applicable), details
- Sort by clicking on the column headers
- Keyboard shortcut just like grid (Ctrl + g) and list view (Ctrl + Shift + l)
- Navigate with keyboard
- Support for Qlik-supported screen readers

16.4 Other improvements

Support for NFS protocol

When installing Qlik Sense Enterprise on Windows, you can connect to a file store through the Network File System (NFS) protocol. With NFS support, you can use a Linux-based file store, for example, when using Google Cloud Platform.

Data literacy built-in

Qlik has focused on our vision for a data-literate world. As part of this mission, and keeping first-time users in mind, new capabilities have been added within Qlik Sense to assist and educate users about their data. For first-time users, these capabilities help explain data concepts unique to Qlik to expedite their onboarding and shorten the time to insights, including more context for chart creation and additional explanation for dimensions/measures.

17 What's new in Qlik Sense June 2020

17.1 Visualizations and dashboards

Sparkline chart

In a straight table, you can now add a mini chart to a table cell. This mini chart, called a Sparkline chart, is a small line chart that lets you measure across a second dimension.

New bullet chart

The new bullet chart is a custom-built gauge for displaying KPIs. The new bullet chart has extended customization and improved functionality. The new bullet chart replaces the bullet chart that was previously included as part of the visualization bundle.

Table customization

When using either the straight table or the pivot table, you can now set the size of the scrollbar, and you can highlight rows on hover.

Org chart enhancements

It is now easier to interact with Org charts with improvements such as a home button, border color options, and automatic resizing.

Filter pane enhancements

When using a filter pane, text can now be aligned left, right, or center, and users can copy values to their local clipboard.

Number formatting

You can now customize the color range when using color by measure or color by expression when using bar, line, and pie charts.

Custom Tooltip enhancements

Improved custom tooltip options:

- Tooltip support for line charts
- More information in tooltips for all charts
- Dynamic titles with expressions
- Support for expression modifiers: `ALL` and `TOTAL`
- Option to hide default rows

17.2 Data management, connectivity and integration

Dynamic views and ODAG improvements

Dynamic views now provide more information during refresh and have received significant performance improvements. The scripting required for dynamic views and ODAG has also been greatly simplified, and the amount of code needed for passing selections and making queries is now minimal.

Qlik Sense Desktop authentication against SaaS

You can now authenticate your Qlik Sense Desktop against SaaS editions, either Qlik Sense Business or Qlik Sense Enterprise SaaS. Now, any user with creation rights on any edition of Qlik Sense can unlock Qlik Sense Desktop for local and offline users.

Authenticating against Qlik Sense Cloud

17.3 Administration improvements

Qlik Management Console improvements

Improved accessibility by exposing custom filter capabilities on the Qlik Management Console landing page, which enables the user to save table views as custom filters, providing the ability to easily select how to best present a table.

Licensing improvements

Qlik now offers license proxy authentication to simplify license management for customers. License proxy authentication provides a secure way of managing license authentication between QlikView and Qlik Sense deployments, and the Qlik Licensing Service. Qlik Licensing Service provides significant benefit by removing the need for customers to oversee the governance and compliance requirements.

18 What’s new in Qlik Sense April 2020

18.1 Visualizations and dashboards

This release brings many new visualization features and styling options to Qlik Sense, letting you create more advanced and customized analytics. We have added an organization chart (Org chart) to the visualization bundle, and you can now add a relative modifier to bar charts, combo charts, line charts, and tables. In addition, we have made improvements to tables, pivot tables, KPIs, maps, and custom tooltips, and we have enhanced app navigation.

Visualizations

Organization chart

We have enhanced our visualization bundle by adding a new chart to represent organizations. The org chart lets you create organization charts from data with a tree structure. You can navigate through the hierarchy by expanding and collapsing the tree.

Search in tables

In addition to the standard search by a URL link, you can now search by a link label in a table. There is also the option to disengage native scroll on touch to enable first column freeze.

Pivot table improvements

There are two improvements to pivot tables:

- You can now save your pivot table layout state. This lets you store expanded or collapsed nodes as a bookmark. This improvement is ideal for sharing views of large pivot tables with many nodes.
- You can now sort by first measure. This sorting method precedes all other sorting. This lets you sort categories differently, for example, sorting category by sales rather than by name.

Map chart improvements

We have made several enhancements to map layer properties. Now, you have number formatting options in the map chart for color and size by measure. We have increased the limit of items on point and area map layers to 50,000.

Relative modifier (percentages)

The relative modifier provides you with a quick way to display the relative percentage of a measure, without having to write expression syntax. You can use it to see the impact of specific selections, relative to the selection, relative to the total, or relative to other fields. This is available as a setting is available in bar charts, combo charts, line charts, and tables.

Dashboards and applications

Tooltip customization

You can now choose to exclude default measures in tooltips. You can also hide all or part of the tooltips from a visualization.

Sheet trigger

This feature lets you add actions that are triggered when a user opens a sheet. With this feature, you can enable more sophisticated navigation functionality. Actions include setting selections, field states, bookmarks, and variables.

Global Navigation

Global navigation provides you with a new approach to top-level navigation through drop-down lists in the Qlik Sense client.

Tabbed navigation

Themes and styling

KPI font layout

You have new options when choosing the layout behavior for fonts in KPIs. You can choose a fixed layout (same text size always), fluid layout (text size depends on box size), or responsive layout (adapts to the size of the box and the length of text).

18.2 Advanced authoring

App distribution into spaces

In a multi-cloud deployment, you have additional controls over content distribution policies. You can now send staged apps from a Qlik Sense Enterprise on Windows environment directly to a managed space in Qlik Sense Enterprise SaaS, for broader consumption across the organization. These apps are also refreshed in the managed space after they are reloaded in the Windows environment.

Publishing to cloud hubs

Share bookmarks

To improve collaboration, we have added a new way to share bookmarks in published apps. You can copy a link to a community bookmark, which can then be shared in other channels such as email or Slack.

Secure Scheduled reloads

You can now run secure scheduled reloads through the QMC, which improves protection and governance around data access. This includes single sign-on support across multiple domains.

19 What’s new in Qlik Sense February 2020

19.1 Augmented Intelligence

With this release, we have made several improvements to our visual insight generation capabilities in Qlik Sense, driven by the Qlik cognitive engine. We have added support for radar charts, allowing our cognitive engine to automatically generate this type of visualization when applicable criteria is met. We have also improved pattern detection for natural language processing (NLP), as well as made natural language search available in Qlik Sense Enterprise on Windows. These capabilities help improve the quality and relevance of AI-generated insight suggestions in Qlik Sense.

Improved Natural Language Processing (NLP)

We have improved NLP in the Qlik cognitive engine with better pattern detection, driving more relevant insight suggestions.

Natural language support

Natural language support in Insights is enabled for new installs of Qlik Sense Enterprise on Windows. It is possible to enable it when upgrading an existing install, but this requires the server SSL certificates to be replaced. Also, we have improved Natural Language Insights with better pattern detection across all platforms.

Extended chart support in Insights

Support is added for Radar chart in Insights. Users will see this when there are 2 dimensions with 12 or fewer values, and a measure. The distinct ratio between the values on the first dimension must be below 0.3.

19.2 Visualizations and dashboards

This release brings many new visualization features and styling options to Qlik Sense, allowing users to create more advanced and customized analytics. We have added trendlines, indicators in tables, moving average and difference modifiers, custom tooltips, and a duplicate function for measures – all driven by customer feedback. New styling options include dimension, header and cell options for pivot tables, a new action button with improved styling, line options for the line chart, custom sorting in the funnel chart, and font family support in custom themes. And we have made improvements to mapping functionality and presentation. With these features, we have once again expanded the quality and power of the visualization and dashboarding capabilities in Qlik Sense.

Visualization

Trend lines

This release features new statistical capabilities to easily add a trend line to both the bar and the line chart. Trend line options include average, linear, exponential, logarithmic, power and polynomial of second, third, and fourth degree.

Table trend indicators

The straight table is being enhanced with graphical elements. The user can add conditional icons similar to the KPI object. Table indicators are useful for presenting trends and warning information and highlighting essential information.

Moving average and difference

Two new modifiers are added to the bar chart, line chart, table, and combo chart. The new modifiers support full moving average and difference in steps, for instance rolling 12 months average. The modifier concept provides a quick and easy way to add another level to any expression. The generated expressions are available for inspection copy and edit.

Custom map point symbols

In addition to standard shapes the user can now any add image in the point layer of the Map chart. The point layer also supports the rotation of images. Having images as map symbols is highly requested by customers, typical use cases are separating types of assets or using logos on the map.

Funnel chart enhancements

A new custom sort option is available for funnel charts. This feature is valuable when a user wants to model a less strict funnel.

Dashboards and applications

Improved action button

We have improved our action button with more styling options, including background color and image, label font size and color and border color, width, and radius. This was highly requested by our customers.

Button

Custom tooltips

Custom tooltips are available for the bar chart, combo chart, map chart, pie chart, scatter plot, and the treemap. You can tailor the tooltip by adding any measure. The measure can be number formatted. This was highly requested by our customers.

Map layer selection toggle

The content creator can now decide which layers should be selectable or not. This is convenient for layers holding background information.

Condition background layers

Map background layers can be switched on or off using a Show conditions option.

Duplicate dimensions and measures

You can now create a master dimension based on a dimension created in a visualization.

Themes and styling

Pivot table styling

Styling includes header font size and color, cell font size and color, text alignment and color of dimension values. Styling improves readability and gives users the power to create and customize the look and feel of Qlik Sense tables.

Line chart styling

The line chart has been improved with a number of new styling options. The lines can be individually styled per measure or for the whole chart.

- Line thickness
- Line style: solid or dashed
- Line curve: smooth or straight
- Vertical presentation

Extended font family selection

The new theme setting allows developers to set the font family for text in Qlik Sense charts. The ability to style apps with custom fonts has been requested by many customers.

19.3 Data management, connectivity and integration

With this release, we expanded the integration between Qlik Sense and Qlik Catalog, as well as overall Qlik Sense connectivity.

QVD Catalog Browsing within Qlik Sense via Qlik Catalog

Since the June 2019 release, Qlik Catalog has had the ability to ingest, profile, refine, catalog and publish data stored within QVD files. That was supplemented by the introduction of a new offering in September 2019 that is solely focused on helping Qlik customers organize and find the QVD files – Qlik Catalog for QVDs. We have now additionally strengthened the integration between Qlik Sense and Qlik Catalog by introducing a new capability in Qlik Sense February 2020. For customers that have Qlik Sense and either Qlik Catalog product, Qlik Sense users will now be able to view the QVD catalog from within the Qlik Sense data manager. This now allows any Qlik Sense user to take advantage of Qlik Catalog within leaving their familiar Qlik Sense environment.

- Easily find and select QVDs from within Qlik Sense data manager. No need to navigate complex folder hierarchies or rely on file naming conventions.
- Take advantage of Qlik Catalog capabilities without leaving Qlik Sense.

Connectors

Google Big Query improvements

Support added for Google Big Query Storage API. Service authentication option is now supported for Google Big Query connector.

Back end improvements

- Significant performance improvements on load balance data reload tasks.
- Upgraded SAML2 component to fulfill the latest security enhancements.

20 What’s new in Qlik Sense November 2019

20.1 Visualizations and Mapping

Table styling

This feature gives the app developer more control over the style, look and feel when creating tables, including:

- Header font size and color
- Cell font size and color

Improved Accumulation in Bar chart, Line chart, Combo chart, and Table

- Short cut to accumulation on measures in UI with check box option
- Accumulation can be made over the whole dimension or in a finite number of steps

Mekko chart

A new native chart also known by other names such as Marimekko chart, Mosaic plot or Mondrian diagram. This chart is commonly used in finance and marketing use cases.

Useful for showing how big the share is of different categories, e.g. sales per company, channel and combined; instead of having four regular bar charts, the Mekko can capture all the aspects.

Mekko chart

Exclude map layers from auto-zoom

The ability to exclude map layers from auto zoom gives more layout control in the map chart. When building map applications, it is sometimes important to exclude layers from zoom, typically background layers such as grid layers, background/cad drawings, etc. The default behavior is to zoom out so all layers are visible.

Trellis container improvements, an enhancement to the visualization bundle

- You can now use 2 dimensions to create a grid with one dimension in each axis. You can also use calculated dimensions.
- You can show a border to highlight the individual trellis charts, and adjust width, color and style.
- Extended advanced mode support enables trellising of more complex charts.

20.2 Qlik Sense Client-Managed Mobile

Support for offline access to apps with Qlik Sense Mobile for Android

With Qlik Sense Mobile November 2019 you can download Sense apps for offline access on Android devices.

21 What's new in Qlik Sense September 2019

21.1 Advanced Authoring

Default Landing Sheets

Building upon the ability to apply predefined selections when a user opens a Qlik Sense application, Qlik Sense September 2019 enables developers to choose a landing sheet to direct the user to a specific sheet. This action can be combined with predefined selections to provide the desired focal point in the analysis process for users, which enhances the Guided Analytics experience in Qlik Sense.

Setting a default bookmark to create an app landing page

Increased Search Limit on Filter Panes

The limit of search values on a filter pane has been increased to 5,000 characters, allowing more values to be selected in bulk. Previously, search values on a filter pane had a limit of 255 characters, which prevented users from copying and pasting a large number of distinct values to apply selections on a field.

Expression Promotion

This feature provides a fast and efficient way to promote a dimension or measure created in an object to a master item. With this capability, application creators have a better workflow when creating and testing expressions that will be later used across the entire application, increasing productivity and driving reuse.

21.2 Visualizations and Mapping

Location finder

The map chart now features a new option to show your location. A new button allows users to fetch their location from the device being used when the button is clicked, it then adds an icon to the map, and zooms to the user's current location. Users can now perform location-based search using the circle select, which delivers value in mobile and field use cases. Due to security reasons, the Qlik Sense Client-Managed Mobile app for iOS currently does not support this feature. This functionality can however be accessed through the mobile browser on iOS.

Variance Waterfall Chart

The Variance Waterfall is a new chart in the visualization bundle that provides variance analysis between two measures shown over the different values of a dimension. This type of chart is typically used in financial actual versus forecast analysis. This highly requested chart type provides a more robust financial charting option and fills an important gap for financial analysis.

Pie chart styling

This release features new styling options for the pie chart in the same fashion as the bar chart. These include the ability to tune the pie chart outline width, color, corner radius and inner radius, which gives the user a variety of options to improve the style, look, and feel of the chart. This helps customers moving from QlikView to Qlik Sense and reduces the need for mashup and extension development.

21.3 Qlik Sense Client-Managed Mobile

Support for MobileIron using Web@work

Users can now use Qlik Sense within a MobileIron environment using Web@work, Safari and Chrome browsers, expanding access within secure MDM environments.

Support for iPadOS

Qlik Sense Client-Managed Mobile now supports the new iPadOS.

> *Support for iPadOS is dependent on the timing of the iPadOS release.*

System requirements

21.4 Qlik Connectors

Salesforce connector

Salesforce connector is now available on all Qlik Sense editions:

- Added to Qlik Sense Business, Qlik Sense Enterprise SaaS and Qlik Sense Enterprise on Kubernetes.
- Updated SFDC connector to stay up to date with the latest API changes.

Snowflake connectivity

Integrated Snowflake connectivity on all Qlik Sense editions and deployment options except for Qlik Sense Cloud Business.

22 What’s new in Qlik Sense June 2019?

22.1 Advanced Authoring

Copy value to clipboard

With Qlik Sense June 2019 you can now copy values to clipboard from tables. This improvement will reduce several steps and increase productivity when reusing values from a Qlik Sense application.

Grid layout on mobile devices

Qlik Sense app developers can choose the rendering layout for sheets on small screens, such as tablets and mobile phones. List view remains the default option, and only shows the visualization titles. The new Grid view shows a small preview of your visualizations, and reduces the amount of white space. This gives developers more flexibility and control over how apps designed for mobile are displayed.

Changing the small screen layout

Native container object

The container object extension was first released as part of the Dashboard bundle, and was very well received for the flexibility it adds to a Qlik Sense application sheet space. The Qlik Sense June 2019 release brings the first ever release of a native Container object, providing the existing functionality from the extension, while adding better integration capabilities with other authoring actions. This first release of the native container object will not support Qlik NPrinting, but this is planned for future releases.

With the release of the native container object, current applications using the existing extension objects will continue to work as before but the two Container Object extensions available in the Dashboard bundle will no longer be listed as new object options for applications.

22.2 Visualizations and Mapping

New charts for the Visualization Bundle

- Trellis container

  Makes small multiples of a master visualization. Great chart for showing trends across several dimensions.

- P&L pivot chart

  A pivot table with customization options for easier creation of financial reports, such as profit and loss statements.

Improved bar chart

- Labels on stacked bars.
- Improved tooltip for stacked bars now displays positive and negative totals.
- Cut bars also for stacked bars when bars go outside of the measure range.
- You can create a chart with measures only, without dimension.
- Styling options for the number of bars: auto, all or a fixed number.
- Styling options for stroke color, width and bar width.
- Toggle mini chart for all scales, not just for continuous axis.

Exploration menu for maps

The exploration menu for maps allows users to toggle layers and labels, adjust object size, and also change the base map image, map language, legend and zoom configuration.

22.3 Qlik Sense Client-Managed Mobile

Push notifications to Qlik Sense Client-Managed Mobile

With the June release, Qlik Sense Client-Managed Mobile for iOS and Android introduce support for native mobile push notifications. Administrators can push system notifications to their users from the Qlik Management Console. Notifications can be sent to all users, or to specific subsets of users, and can include a link into a dashboard. System notifications can be useful to inform users about updates to dashboard, or to announce system events.

System notifications and System notification policies features are available only on Qlik Sense Enterprise on Windows installations licensed with a signed key

Managing system notifications

Managing system notification policies

22.4 Multi-Cloud

The following capabilities are now available for Qlik Sense Enterprise SaaS(SaaS) and Qlik Sense Enterprise on Kubernetes deployments:

- Insight advisor precedent based learning.
- Use of IdP groups for access control
- Teradata connector
- Download a single Visualization as data to Excel
- Support for RedHat Openshift in Qlik Sense Enterprise on Kubernetes. This features is not available in Qlik Sense Enterprise SaaS

22.5 Qlik Connectors

- single sign-on (SSO) support in Windows.

23 What’s new in Qlik Sense April 2019?

23.1 Augmented Intelligence

Associative insights

Offering powerful new Augmented Intelligence (AI) insights that reveal what is hidden in your data. This feature is driven by the Qlik cognitive engine and Qlik associative engine working together.

Associative insights helps users discover and understand the significance of values in the data that are not selected. Look for **Associative insights** in the selections tool.

23.2 Visualizations and Mapping

We have introduced Bar & Area Chart and Bullet Chart in the Visualization Bundle, and a new capability to set default map backgrounds for improved customization.

Maps enhancements

It is now possible to set a default map background for all new map charts. Enabling further customization of backgrounds, now users can choose to set their own predefined background instead of using the Qlik standard background. This feature provides better support for handling geographic considerations such as disputed regions with politically sensitive boundaries.

In addition, you will find the following feature enhancements for mapping:

- The ability to include new lines in labels, with an improved look of labels in background maps (also added to Qlik GeoAnalytics).
- New size legends for map point layers.
- The capability to insert images in map background layers. This is suitable for simple images such drawings, floor plans, etc.

Visualization Bundle

Two new charts in the visualization bundle

- Bar & Area chart: a bar chart with transition effects, connectors and labels on tacked bars.
- Bullet chart: a bar chart ideally used for tracking towards a goal, showing target, or actual and bands for good/bad/average.

23.3 Multi-Cloud

With Qlik Sense April 2019 we have introduced a standalone SaaS deployment option for Qlik Sense Enterprise (QSE), with the ability to create, reload, and consume Qlik Sense apps entirely on Qlik’s hosted cloud. This release also enables parity between Qlik Sense Enterprise on Windows and Qlik Sense Enterprise on Kubernetes for adding, updating, and removing themes and extensions. With

Qlik Sense April 2019, all deployment options for Qlik Sense Enterprise, which includes Qlik Cloud (SaaS), Kubernetes, and Windows , are available independently and work together as part of a multi-cloud deployment.

The following capabilities are now available for Qlik Sense Enterprise deployed on Qlik Cloud (SaaS) and Kubernetes:

- Create apps
- Connect to data sources
- Store/Use QVDs / Files
- Schedule app reloads
- Team Co-development of apps
- Personal and shared spaces
- Role-based access control
- Share sheets/bookmarks

  Granting access to sheets, bookmarks, and stories
- Upload / export apps
- Console for management

  Management console
- License integration
- Bundled extensions
- Custom extensions (only on Qlik Sense Enterprise on Kubernetes)
- Mashups (only on Qlik Sense Enterprise on Kubernetes)
- ODAG
- API (reload only)
- Usage auditing

  Events
- Link to QlikView documents (available both in Qlik Cloud and Qlik Sense Enterprise on Kubernetes)

23.4 Qlik Sense Client-Managed Mobile

Qlik Sense Mobile for BlackBerry

Qlik Sense Mobile for BlackBerry is the new Qlik Sense Client-Managed Mobile application built for the BlackBerry Dynamics EMM platform, supporting advanced management and security for BYOD (bring your own device) environments. It allows BlackBerry Dynamics EMM users to access Qlik Sense in a containerized mobile app, with end to end secure communication, including SSO and at-rest encryption. Qlik Sense Mobile for BlackBerry enables administrators to govern Qlik Sense Client-Managed Mobile deployments across the organization by setting specific policies and managing app distribution.

Qlik Sense Mobile for BlackBerry

23.5 Qlik Connectors

- Support for Enterprise Data Sources in a SaaS environment with ODBC Drivers in Qlik Cloud and Multi-Cloud environments.
- Extended connectivity reload capabilities with Basis Scheduled reloads for Enterprise SaaS.

24 What’s new in Qlik Sense February 2019?

24.1 Usability Improvements

Single page application flow

Qlik Sense now has a single page application flow. You can move between Data, Analysis, and Story spaces without reloading the page. This creates fluid and natural navigation for end users and developers, with fewer clicks and faster time to insights.

24.2 Advanced Authoring

Dollar-sign expansion preview

The expression editor now provides a way to evaluate the results of calculations with dollar-sign expansions. Developers who use variables can see how these work in the context of an entire expression. This reduces the chances of having the wrong syntax in nested expressions.

Targets.WebHelpOnly">Expression editor

24.3 Visualizations and Mapping

Visualization Bundle

Visualization bundle is a set of new charts:

- Funnel chart: shows progression of a measure through stages.
- Sankey chart: displays a measure as flow, and how the measure is divided into different categories in one or more stages.
- Radar chart: shows a measure spread on polar chart with two category dimensions, one for the axes and one for areas.
- Heat map chart: shows a matrix of color values with two dimensions and a measure.
- Multi KPI: shows measures with more options and customizations than the standard KPI object.
- Word cloud chart: highlights the most common occurrences in a text dimension.
- Network chart: visualizes a graph with dimensions for nodes and parents and measures for link values.

Dashboard Bundle

One extension added to the existing bundle:

- Share button: creates sharable app links with current sheet and selection.

Support for WMS in map background layers

Map charts can now use maps from third-party WMS servers as background layers. WMS background layers are added through a wizard interface, making configuring the WMS background easy.

Maps

24.4 Qlik Sense Client-Managed Mobile

- The Qlik Sense Client-Managed Mobile app is now available for devices running Android OS, allowing to consume Qlik Sense apps online.
- You can now open and consume Qlik Sense mashups using the Qlik Sense Client-Managed Mobile app.
- Microsoft Intune EMM solution is now supported for accessing Qlik Sense Enterprise from a mobile device.

24.5 Qlik Connectors

Integrated Single Sign On Support (SSO)

Three drivers in the Qlik ODBC Connector Package now have beta-level support for single sign-on (SSO) (MS SQL Server, Apache Hive and Cloudera Impala).

25 What’s new in Qlik Sense November 2018?

25.1 Advancements to Augmented intelligence

Precedent based learning

The time has come for us to unveil Qlik SenseNovember 2018. We are are introducing Machine Learning with precedent/application learning capabilities, leveraging information from users’ interactions with the product to feed the cognitive engine for smarter insights and results.

Insight advisor light authoring

Users can now do light authoring with insight advisor. This capability lets users change the suggested visualizations and analytics offered by the cognitive engine, giving greater flexibility and control when discovering insights.

25.2 New advanced authoring features

Alternate states

We have exposed the alternate states functionality that was previously only available through API calls. Alternate states let you create visualizations for comparative analysis based on a state other than the default selection state. Alternate states are a new type of master item, and once created, they can be applied on sheets or visualization objects using the new alternate state option, located under Appearance. With this feature, you can make different selections on the same dimension and compare them in a single visualization, or in two or more visualizations side by side. You can also an alternate state to an expression, using set analysis. This allows for complex comparative analysis.

Exposed set analysis

This feature makes it easier for developers to create expressions with the correct set analysis syntax.

Set expression improvements

Set expression in the expression editor dialog has been improved.

Single selection in fields

This capability supports guided analytics use cases in which a single selection will change the analysis flow. The new Qlik Sense field settings allow developers to enable the "always one selected value" for a particular field. The ability to always have one selected value can be used in applications that require better control for conditions in expressions, localization requirements, and other guided analytics use cases.

Fully supported Dashboard Extension bundle [#1]

Qlik SenseNovember 2018 is introducing extension bundling. This Dashboard extension bundle can be installed alongside Qlik Sense and are fully supported by Qlik. Users can choose to opt out of this bundle option. The objects included in this bundle were previously available as popular extensions on Qlik Branch. Now as part of the Qlik offering, Qlik will maintain and ensure the quality and performance of these objects upon version upgrades. These extension objects are fully functional, but do not maintain other product standards such as accessibility, multi-language, and RTL.

The Dashboard bundle includes:

- Date range picker: allows users to quickly and easily select dates and ranges.
- Navigation button: lets users quickly navigate to sheets, stories, and websites. Can also trigger actions like selections and set variables.
- On-Demand reporting: generation of Qlik NPrinting reports is now possible from inside apps.
- Tabbed container: ability to switch between visualizations with tabs.
- Show/hide container: similar to tabbed containers, but now with show conditions.
- Variable input: users can set values with buttons, drop-downs, sliders, and input boxes.

Dashboard bundle

25.3 New ways to collaborate

Sharable Qlik Sense chart links

You can now share chart links with custom selection states. This means you can share initial insights and gather further analysis quickly.

This feature is currently available only in Qlik Cloud and Qlik Sense Enterprise for elastic deployments.

25.4 Advancements in Visualizations and Mapping

New map chart layer

A new map chart layer is now available for displaying pie or bar charts on top of a map to illustrate distribution of values of multiples types.

Improved pie chart

Pie charts now support a second measure to display multiple values in the outer radius. This visualization is also known as rose chart.

Outline opacity setting

Outline opacity setting can now be applied with a slider for increased readability, particularity with small features.

Further advancements in tile map services

Further advancements in tile map services, such as Bing Maps, are now supported by the map chart background layer.

25.5 Improved Management

Import Export App enhancements

Import Export App enhancements gives you the ability to import and export apps with or without data out of the QMC.

Multi-Cloud Developments

Qlik’s multi-cloud offering now offers simplified configuration options using self-signed JSON Web Tokens (JWTs). This means components can be connected without requiring specific features of an IdP. In addition, Qlik Cloud can now integrate with ADFS as the identify providers allowing customers with Active Directory infrastructure to authenticate their users.

25.6 Accessibility

Accessible list boxes, keyboard navigation, and screen reader capabilities for list box access.

26 What’s new in Qlik Sense September 2018?

26.1 Augmented intelligence

Insight advisor

The insight advisor has been extended to all users of Qlik Sense apps, including consumers of published apps. Users can search and generate insights on master items.

26.2 Advanced authoring

Improvements to sheet control

- You have improved control over Qlik Sense when using devices that support touch and mouse input events.
- App developers can set a default bookmark for an app. The selections are applied when the app is opened.

App customization

App developers can disable responsive layout for sheets and set a custom size in pixels. Your dashboard will be presented to users exactly as you create it. This feature is not supported in mobile device mode.

Expression editor enhancements

- Direct links are provided to the Qlik Sense help page from expression functions.
- Improved categorization of functions.
- Improved search makes it easier to find field names, functions and variables.

Better control in visualizations

- You can show or hide columns in a pivot table based on a formula.
- You can customize master measure items with color scales or gradients. This is a convenient alternative to custom color expressions.

26.3 Visualizations and mapping

New map layer

Density layer is a multi-color gradient map background where the color intensity depends on the weight and closeness of points. This layer is useful, for example, for mapping data such as crime statistics and house values on a neighborhood level.

Map improvements

- Adaptive pixel zoom and pan to optimize performance when browsing dense maps.
- Default colors for added layers. Each new layer has an independent color picked from palette.
- KML files with geographic line data can now be loaded and rendered.
- Field labels for size and width make legends and pop-ups easier to read.

26.4 Management

Improvements to back end work flow

Multiple apps can be moved between streams in the QMC. This builds on the functionality released in the Qlik Sense Enterprise April 2018, where single apps could be moved between streams.

Open source front end framework upgraded to version 1.6.9, which provides better stability and compatibility.

26.5 Mobile

Access to Qlik Sense Enterprise is now supported in AirWatch EMM (Enterprise Mobile Management) environments using the Safari, Chrome or VMware browser.

26.6 Qlik connectors

We continue to expand connectivity options.

- Native connectivity added to MS Azure QSL DB, with tested and supported integration.
- The JIRA connector is released to GA from beta.
  JIRA
- Enhanced security for LDAP authentication, which is built into the Qlik ODBC Connector. This improves customer experience and time to value, with industry recognized encryption and authentication standards.

27 What’s new in Qlik Sense June 2018?

27.1 Create, Discover, Collaborate

Insight advisor

Insight advisor is an AI capability that suggests the most relevant insights and visualizations for users to consider and explore. Insight advisor is powered by Qlik cognitive engine, which auto-generates and prioritizes relevant insights and analytics based on Qlik's proprietary algorithms. Creators of apps can use Insight advisor to find insights in the data they load into Qlik Sense and evaluate these insights for the overall data set, dimensions in the data, or search criteria to target specific areas. Insights are contextually aware and work with Qlik’s associative engine.

Accelerated self-service

- Alternative chart suggestions: Qlik Cognitive engine now provides a number of alternative charts in the property panel to complement the initial recommendation.
- Switch dimensions and measures: you can now switch dimensions and measures in the property panel with a simple drag and drop.
- You can now quickly change between common aggregation methods using a drop-down menu in the property panel.

Advanced authoring

- Qlik Sense sheets can now be extended vertically to a scrollable mode.
- Grid size can now be changed in sheets with existing objects.

New capabilities in the Expression Editor

Qlik Sense Expression editor now has improved usability:

- **Fields**: create statistical aggregation functions based on field data. Two check boxes allow you to independently insert **Distinct** and **Total** clauses in statistical aggregation functions.
- **Functions**: use this control to enter general Qlik Sense functions into an expression.
- **Variables**: use this control to insert variables into an expression. When a variable is selected, a preview of its definition and value appears.

Filtering data from files

With Qlik Sense June 2018 you can create filtering conditions for the field content in your files. These filters are automatically applied into the script when loading data in Data manager.

Visualizations and mapping

- Line layers are now available in the multi-layer map chart.
- You can now show and hide specific columns in a straight table using expression conditions.
- The mini graph used for scrolling can now be turned off for line charts, bar charts, and combo charts.

Improved app management from the hub

Qlik Sense June 2018 brings new and improved capabilities to how you manage apps from the hub:

- You can now republish an app that you have already published, from the hub. Create a duplicate of your published app first, make your changes, and then republish it back to the same stream as the published app. The stream will be automatically selected from the system based on the app name.
- A new dedicated section for published apps has been added to the hub. Within this section you can still create an app duplicate and then use the new Republishing an app from the hub capability to publish your changes back to your users.
- The app owner can now approve community sheets of a published app and add them to the list of base sheets. The app owner can also decide to unapprove base sheets to the **Community** section.

Accessibility

To further improve Qlik Sense accessibility, the following features have been implemented:

- Screen reader tags
- Keyboard navigation for tables
- Flip from chart to table for value inspection and selection

Accessible Qlik Help site

The following accessibility improvements have been implemented for the entire Qlik Help site, help.qlik.com:

- Users can now navigate and interact with the help site using keyboard keys and shortcuts.
- UI elements, text, search on, and images support zooming, resizing and screen magnifiers.
- Text, icons and images are compliant with accessibility standards for contrast and readability.

27.2 Deploy and Administer

Multi-Cloud

With Qlik Sense June 2018, you can distribute apps developed in Qlik Sense Enterprise on Windows to Qlik Cloud and Qlik Sense Enterprise for elastic deployments. Apps are consumed in the new cloud hub. Qlik Sense Enterprise on Windows and the cloud environment are managed using a single license and sign-on.

For an appropriate license and detailed information, please contact your Qlik representative or Qlik Support.

27.3 Mobile

Support for BlackBerry Access browser.

With Qlik SenseJune 2018, you can now access Qlik Sense and consume apps from a mobile device that uses a BlackBerry Access browser. A BlackBerry Dynamics deployment must be set up by an administrator for your users. For information about how to set up and use BlackBerry Access to connect to Qlik Sense, see the support article *Connecting to Qlik Sense using BlackBerry Access*.

27.4 Qlik Connectors

With Qlik Sense June 2018, five new connectors have been added to the ODBC connectors package. All connectors listed here are updated to the latest version of OpenSSL.

- Presto: the PrestoDB Connector enables you to create connections that query all the data sources in an environment that have been configured with Presto.

The following connectors are available in beta version:

- Apache Drill: the Apache Drill Connector provides access to non-relational data stores.
- Apache Phoenix: the Apache Phoenix Connector provides access to relational data stores.
- Apache Spark: the Apache Spark Connector is used for direct SQL and HiveQL access to Apache Hadoop/Spark distributions.
- MongoDB: the MongoDB Connector gives access to MongoDB, which is a NoSQL database program.

28 What’s new in Qlik Sense April 2018?

28.1 Create, Discover, Collaborate

Assisted data visualization with Qlik Sense chart suggestions

Qlik Sense chart suggestions make it easier to create a visualization by allowing you to simply drag and drop fields onto your sheets. Chart suggestions are created using the Cognitive Engine in Qlik, which leverages insights from the data loaded and combines them with best practices for data visualization.

Publishing an app from the hub

In Qlik Sense April 2018 you can publish an app that you have created to any stream for which you have publish access. If you have published an app to a stream, you can move your app between the streams for which you have permission to publish.

Improvements based on customers feedback

Qlik Sense April 2018 introduces a number of improvements based on customer feedback :

- Grid size of an app sheet can now be customized with three different sizes: small, medium or large.
- You can now set custom abbreviations in the load script. For example, you can choose to use Billions instead of G.
- When clicking the Edit button of a linked visualization, a new shortcut redirects you to editing the Master visualization item.
- New keyboard shortcuts for selection back/forward have been added.

Maps visualizations improvements

Qlik Sense April 2018 features significant improvements to the built-in maps visualization:

- Support for multiple layers.
- Labels for point layers and area layers.
- Quick look up of countries, divisions, cities, postal code areas.
- Higher fixed upper limit of number of objects.
- Circle select with distance measure.
- Drill down support.
- Layer control, zoom limit and draw order.
- English or local name in the background map.

Keyboard navigation support for Qlik Sense hub

To improve accessibility, Qlik Sense hub now supports keyboard navigation and shortcuts.

Linking Qlik Sense Client-Managed Mobile to third-party applications

Qlik Sense Client-Managed Mobile can now interact with third party mobile applications through a custom generated URL (deep link). The link can be embedded within the third party mobile application, with appropriate selections and filters. Clicking the link opens the app in Qlik Sense Client-Managed Mobile with the filters and selections that were applied during original presentation. As a result, user experience is improved and context is provided when interacting with the app.

28.2 Deploy

Deployment improvement

From Qlik Sense April 2018 it is no longer necessary to use port 4244 as the authentication port. If you are using SSL to protect your environment, you can use port 443 as an external facing port for the Qlik Sense Proxy service (QPS).

Per-app VPN mode for Qlik Sense Client-Managed Mobile

Qlik Sense Client-Managed Mobile now works in a per-app VPN mode with the appropriate VMware Workspace ONE tunnel components. This helps secure network traffic between Qlik Sense Client-Managed Mobile and Qlik Sense Enterprise deployed behind a corporate firewall. With this addition, it is no longer necessary for device network traffic to go through a VPN. Only Qlik Sense Mobile apps are routed through the VPN, reducing load on the VPN server.

28.3 Administer

Allocations for new license types

Customers who have purchased Qlik Sense with support for the new Professional and Analyzer license types can now configure the allocation of these licenses in the QMC.

Analytic connections improvement

With Qlik Sense April 2018, Qlik Sense Enterprise administrators now have the ability to add, remove, and reconfigure Analytic connections without additional restarts of any service becoming required for the Analytic connections to function. Administrators now can also stop and start any services in any order without impacting the Analytic connection functionality. Advanced Qlik Sense Desktop users can now develop and use Analytic connections even when the SSE server implementing the Analytic connection is started after the Qlik associative engine.

Enable anonymous users to export data

From Qlik Sense April 2018 anonymous users can print and export data.

29 What’s new in Qlik Sense February 2018?

29.1 Create, Discover, Collaborate

Dynamically generated queries to web sources in scripts

You can now generate the URL dynamically before retrieving data using the webfile connector in the data load script. This opens up a range of new possibilities for querying web hosted files.

Loading files from web resources

Loading a table from an analytic connection

You can now return a full table in a single request to an analytic connection from the data load script, using the new **Extension** clause of **Load**. This improves performance drastically when loading data from an analytic connection during data reload.

Load

Simplify data preparation with recommended associations

You can now use recommended associations to see possible associations between tables. This facilitates experimentation before applying changes to the data model .

Managing data associations

Styling an app with custom themes

You can now use custom themes to style an app on a global or granular basis:

- Change colors of background and individual chart elements.
- Define color palettes and color gradients.
- Specify font sizes and font color.

Styling an app

On-demand App Generation

You can now create On-demand App Generation (ODAG) solutions with support for anonymous usage. This adds capabilities for external facing websites and OEM scenarios.

Managing big data with on-demand apps

Qlik Sense Client-Managed Mobile

You can now use Qlik Sense Client-Managed Mobile on your iPhone. The app features the full QIX engine that delivers Qlik's patented associative technology on all supported Apple mobile devices online and offline.

Qlik Sense Mobile app

Updated ODBC connectors

The Qlik ODBC Connector Package includes updated connectors:

- Oracle

  Oracle

- PostgreSQL

  PostgreSQL

29.2 Deploy, Administer

SSO with Microsoft SQL Server

You can now create a single connection to Microsoft SQL Server that can be shared across a number of different users. Each user is only able to see tables and values in SQL Server as defined by the database security rules.

Configuring single sign (SSO) with Microsoft SQL Server (MS SQL Server)

30 What's new in Qlik Sense November 2017?

30.1 Create, Discover, Collaborate

Keyboard navigation in Qlik Sense apps

You can now navigate using your keyboard in Qlik Sense apps. Keyboard navigation is supported both within the app overview page and within the Qlik Sense toolbar.

Keyboard navigation and shortcuts in Qlik Sense

Details dialog in Data manager

You can now view the operations and transformations performed on tables and fields using the **Details** dialog. **Details** displays the current operations and transformations made to the selected table or field, in the order they are applied in the generated data load script. This enables you to easily see the source of a table or field, the current changes that have been made, and the sequence in which the changes have been applied.

Viewing table and field transformation details in Data manager

Add data manually

You can now manually enter data in **Add data** in **Data manager**. **Manual entry** in **Add data** enables you to enter data into a table editor and then add it as a table in **Data manager**.

Adding data manually in Qlik Sense

Additional functions for calculated fields

Additional functions are now available when you are created calculated fields in **Data manager**.

Using calculated fields

New ODBC connectors

The Qlik ODBC Connector Package includes two new connectors: Amazon Redshift and Google BigQuery.

30.2 Deploy, Administer

SAML single logout

With SAML single sign-on (SSO), you only have to log in once to access several web sites. There is then a potential risk that one or more sessions are not properly closed. By using SAML single logout you eliminate that risk.

31 What’s new in Qlik Sense September 2017?

31.1 Create, Discover, Collaborate

Sequential operations in Data manager

Improvements to **Data manager** enable you to perform sequential transformations on your tables and fields. Where previously you were limited in what transformations you could perform together, such as being able to apply a single data profiling card transformation on a single field, you can now use the data profiling cards, concatenation, calculated fields, and unpivoting data together.

Managing data in the app with Data manager

Recent colors in color picker

The color picker in Qlik Sense now displays the five most recent colors selected in Qlik Sense.

Navigation and usability improvements to Data manager

Enhancements have been made to Data manager to improve the user experience, including repositioning and restyling the Add data buttons and redesigning the app overview page when no data is loaded.

New visualization: Waterfall chart

You can now illustrate how an initial value is affected by intermediate positive and negative value with the new waterfall chart. For example, you can show the positive and negative contributions of different accounts in an income statement.

Ease-of-use enhancements to on-demand apps

Users now have access to more information and have more control over generated on-demand apps. The navigation point panel now displays the number of rows selected and constraints on individual fields and the selection status related to each constraint. Users also have control over the naming of generated on-demand apps, and they can reload and regenerate on-demand apps based on current selections. They can also copy and regenerate an on-demand app to preserve its current state while creating a version of the app with new selections.

31.2 Deploy, Administer

Qlik Sense Client-Managed Mobile app

The Qlik Sense Client-Managed Mobile app allows you to securely connect to your Qlik Sense Enterprise deployment from your supported mobile device. The Qlik Sense Client-Managed Mobile app can be deployed and managed using either Enterprise Mobile Management (EMM) software, or Apple Developer Enterprise Program tools.

You can download the new Qlik Sense Client-Managed Mobile app to your supported iOS device, and then connect to a Qlik Sense Enterprise server. You can download Qlik Sense apps, and then view those apps when you are not connected to a server.

Centralized logging

With the introduction of shared persistence, all nodes now have direct access to a common database and file system. The Qlik Logging Service centralizes the logging by collecting all the messages and inserting them into a PostgreSQL database. This feature is optional but is enabled by default.

32 What’s new in Qlik Sense June 2017?

32.1 Create, Discover, Collaborate

On-demand apps

On-demand apps enable you to load and analyze very large volumes of data, so-called big data. On-demand apps provide aggregate views of big data stores and allow you to identify relevant subsets of the data to load for detailed analysis. On-demand apps are created from specially designed selection apps and template apps.

Managing big data with on-demand apps

New visualizations

You can now use these additional chart types to visualize distribution and range of your data.

The box plot is suitable for comparing range and distribution for groups of numerical data. Data is visualized by a box with whiskers, and a center line in the middle.

The distribution plot is suitable for comparing range and distribution for groups of numerical data. Data is plotted as value points along an axis.

The histogram is suitable for visualizing distribution of numerical data over a continuous interval, or a certain time period. The data is divided into bins.

Synchronizing scripted tables in **Data manager**

You can now synchronize your scripted tables in **Data manager**, enabling you to use the tools available in **Data manager** with your scripted tables.

Synchronizing scripted tables in Data manager

Data profiling cards

You can now view summaries of table field data and transform that data in **Data manager** using the data profiling cards.

The **Summary** card enables you to view a summary of data in a table's field. In addition, the **Summary** card enables you to view different possible data interpretations, such as viewing the field's data as a dimension or measure, enabling different potential transformation options.

The **Replace** card enables you to select one or more values from a field and replace them with another value.

The **Set nulls** card enables you to select values from a table field and then manually set them as null.

The **Order** card enables you to apply a custom order to values in a dimension field.

The **Split** card enables you to split content from a field into multiple fields.

The **Bucket** card enables the grouping of measure field data into ranges, creating a new field with the specified groupings.

Concatenation in **Data manager**

You can now manually concatenate tables in **Data manager**.

Colors and dimensions

You can now assign colors to master dimensions, ensure that the same colors are used for your dimensions across visualizations.

You can also now assign individual colors to a dimension's values, ensuring that individual values are colored consistently across visualizations when coloring by dimension.

32.2 Administer

Single sign-on to Cloudera Impala

You can now set up SSO connections to Cloudera Impala.

You set up single sign-on by establishing a trusted connection to Cloudera Impala, and then setting the ODBC connection to use the Qlik Sense credentials.

Three new Monitoring apps

To scale with deployment size and expanding log history, and to meet greater needs for Qlik Sense monitoring, the Monitoring apps have been refactored into three new smaller, more specialized apps.

Analytic connections

With the analytic connections you can configure a server side extension to extend the Qlik Sense expression library and support calls to third-party engines.

32.3 History

This PDF contains all the news and updates since the first release of Qlik Sense.

News since Qlik Sense 1.0

33 What’s new in Qlik Sense 3.2?

33.1 Create, Discover, Collaborate

Calendar measures

You can now create calendar measures to analyze data over relative time ranges. For example, you can use calendar measures to compare year-to-date sales figures with figures from the same period the previous year.

Colors and measures

You can select colors for charts based on measures. You can also specify a single color from a full color palette.

33.2 Deploy

Shared persistence

You can now deploy a multi-node site with shared persistence. This means that nodes share a single repository database and a single network folder for the application files. You can either share the central node repository, or set up a high availability database cluster as the repository database. This allows for higher volumes of changes, such as reloads, and removes delays caused by synchronization.

33.3 Administer

Desktop authentication

Qlik Sense Desktop users can now authenticate against their Qlik Sense Enterprise server. The Qlik Sense Enterprise administrator configures an authentication link in the Qlik Management Console, and distributes it to users.

- Starting Qlik Sense Desktop
- Configuring Qlik Sense Desktop authentication

QlikView converter

The QlikView converter simplifies the work associated with converting elements from a QlikView document into master items in a Qlik Sense app. Visualizations, expressions, dimensions, and variables can be selected for conversion. The tool is available from the Dev Hub.

34 What’s new in Qlik Sense 3.1?

34.1 Create, Discover, Collaborate

City and country recognition when loading data

Geographical data (points and area polygons) are now created automatically when you load data containing names of recognized cities and countries. This enables you to quickly create a map visualization of your data without loading geographical data separately.

Scroll alignment

You can now set the position of the chart scroll bar to start at the end of the data.

Default app theme

You can now change the default app theme. The new Qlik - **Standard** theme adjusts the padding and spacing around objects as well as provides designated spaces for titles. New and existing apps use the Qlik - **Classic** theme by default.

Drag and drop coloring

You can now drag and drop any field, dimension, or measure from the assets panel onto a visualization to change the color.

Navigation

You can now choose to show or hide the navigation menu in the hub.

Search Qlik DataMarket

Qlik DataMarket now includes a search facility that allows users to search for terms and phrases in DataMarket's packages, categories, and data sets.

Salesforce Connector supports primary key chunking

The Qlik Salesforce Connector now supports primary key (PK) chunking when data is loaded in Bulk mode.

Filtering data in the database connectors

The database connectors in the Qlik ODBC Connectors Package installed with Qlik Sense allow subsets of data to be selected by filtering for specific data in database records.

34.2 Administer

Qlik Management Console

The QMC now has an engine setting: **Create search index during reload**, which improves the first search experience for a user.

35 What's new in Qlik Sense 3.0?

35.1 Create, Discover, Collaborate

Qlik connectors installed with Qlik Sense

Qlik connectors that previously had to be installed separately are now installed automatically with Qlik Sense.

- The Qlik REST Connector 1.1 enables Qlik Sense to efficiently load data into a Qlik Sense app from a REST data source. The QlikREST Connector is a generic connector. That is, it is not tailored to a specific REST data source.
- The Qlik Salesforce Connector 14.0 enables Qlik Sense to efficiently load data into a Qlik Sense app from a Salesforce.com data set. Salesforce.com data is available to users with a Salesforce.com account and current access credentials.
- The Qlik database connectors in the ODBC Connectors Package 1.1 enable Qlik Sense to efficiently load data into a Qlik Sense app from databases accessed through supported ODBC (Open Database Connectivity) drivers. When using one of the database connectors in the Qlik ODBC Connectors Package, you do not need to create a DSN connection before connecting to the ODBC database.

Managing table associations in Data manager

The Associations view in Data manager has a new and improved user interface, with bubbles representing the tables in the data model. You can associate your data more easily according to recommendations.

Managing data associations

Single sign-on to SAP HANA

You can now set up SSO connections to SAP HANA.

You set up single sign-on by establishing a trusted connection to SAP HANA, and then setting the ODBC connection to use the Qlik Sense credentials.

New Qlik DataMarket packages

Qlik DataMarket provides new premium data packages:

- Historical stock prices from major stock exchanges
- Financial data from companies worldwide
- Population indicators for India's states and districts
- Population of Canada by provinces or territories

New multiple-table structure for Qlik DataMarket data sets

A multiple-table structure increases the efficiency with which data is loaded, and it can improve the data associations.

When data is loaded from a Qlik DataMarket data set, it is allocated to multiple individual tables. These tables are associated by generated key fields. Measures and time periods from the data set are consolidated in one table that is assigned the name of the data set. Dimension fields are allocated to individual tables.

Making associations in Qlik DataMarket

Publishing apps

You can now publish your apps from Qlik Sense. In previous versions, you could only publish of apps from the Qlik Management Console.

Publishing an app

New language support

Qlik Sense is now available in four new languages: Polish, Turkish, Korean and Traditional Chinese.

Apps now support bidirectional reading order, for languages such as Arabic and Hebrew.

App styling

You can now apply styling to your app to customize the app based on your company standards.

Smart search now includes visual search

You can now search visualizations as well as data items. Search results are returned as a gallery of visualizations in which the search terms are found. Click on a visualization to go directly to the sheet it comes from.

Enhance your apps with widgets

To enhance the appearance and behavior of your apps, you can now create and use a new type of custom object, the widget. Libraries of widgets appear in the assets panel alongside visualization extensions. Widgets are simpler than visualization extensions to build. Typically, widgets are customized KPI objects, simple chart-style visualizations, tables, and sheet navigation objects.

Time-aware charts

You can now use a continuous scale on the x-axis in a line chart to get a accurate view of time-based data.

Shared content in the Qlik Sense hub

QlikView documents can now be shared from QlikView to the Qlik Sense hub.

Qlik NPrinting reports can now be distributed to the Qlik Sense hub.

Additional changes

Geopoints, which you use in map visualizations, can be created automatically from latitude and longitude data.

You can now open a dialog with user information from the hub.

You can add and attach multiple data files to your app in one go, using drag and drop.

35.2 Deploy

IPv6

Qlik Sense now supports IPv6.

Qlik Deployment Console

The Qlik Deployment Console (QDC) is not supported in Qlik Sense 3.1.

35.3 Administer

Monitoring apps in QMC updated

The Monitoring apps now include alternative dimensions and measures for increased customization.

The Operations Monitor app includes basic metadata about users, tasks, apps, and app objects.

The License Monitor app reports token usage compared with allocated and available tokens and shows token usage by stream in addition to app. Basic metadata about users and apps is also available in the app.

36 What’s new in Qlik Sense 2.2?

36.1 Create, Discover, Collaborate

Data manager

The data manager user interface is improved, and several features have been added:

- You can now split tables that have been concatenated.
- You can rename tables and fields.
- You can add calculated fields to a table. A calculated field uses an expression to define the result of the field. You can use functions, fields, and operators in the expression.
- You can change the display format of date and timestamp fields.
- Fields containing dates and timestamps are expanded with date attributes that you can use in visualizations and expressions.

Alternative dimensions and measures

You can now add alternative dimensions and measures to some visualizations, using the property panel. The alternative dimensions and measures are then easily accessible and you can quickly change the data in your visualization. The visual exploration menu (available while analyzing visualizations) also supports this.

Export data from pivot tables and other charts

You can now export data from pivot tables, stacked bar and line charts, and treemaps.

Qlik DataMarket

New DataMarket packages are available for global weather, currencies, and stock markets.

The interface for selecting data has been improved.

- Licensed and free data sets are separated into clearly marked categories.
- Hierarchical data sets are structured to facilitate selection.

Data storytelling

Data storytelling has been improved.

- You can now take a snapshot of a visualization when you hover over the visualization.
- You can now choose to create an annotation when you take a snapshot of a visualization. The annotation is displayed in the snapshot library and helps you to distinguish between your snapshots.
- When you add a snapshot to a story slide, the snapshot now snaps to grid.
- When you play a story, a tool tip now appears when you hover over data points.

36.2 Deploy

Qlik Sense Proxy Service metrics

A new metric, PrintingLoadBalancingDecisions, is available for the Qlik Sense Proxy Service (QPS).

Qlik Sense Printing Service logging

The folders and files used by the Qlik Sense Printing Service (QPR) for logging have been updated.

Qlik Deployment Console system requirements

MicrosoftWindows 10 is now a supported operating system for the Qlik Deployment Console (QDC).

Cloning sites

The Qlik Deployment Console (QDC) can be used to clone entire Qlik Sense sites.

Qlik Sense setup files stored in the S3 bucket

The Amazon Web Services (AWS) plug-in uses Amazon Simple Storage Service (S3) to cache the Qlik Sense setup files, so that they do not have to be loaded for each new site or node.

36.3 Administer

New license option

The capacity-based license gives you the flexibility to configure the number of cores to use on a CPU.

Limit resource consumption by apps

The Qlik Sense Engine Service now includes settings for limiting the amount of resources (memory or time) that can be consumed by apps.

Redesign of the audit page in the Qlik Management Console

The audit overview page has an enhanced table of rules for security, sync, and license.

Operations Monitor app in QMC updated

The Operations Monitor app now incorporates the newly added Printing (Export) logging. A new Export Overview sheet is included in the app.

37 What’s new in Qlik Sense 2.1?

Here are the highlights of the new and updated features in Qlik Sense 2.1:

Attach data files	You can now upload and attach data files to an app on a server.
Variables overview	You can now get an overview of all the variables in an unpublished app, and create, edit, and delete variables.
Media library	You can view all images in an app, and upload new images.
Visual exploration	You can now edit some visualization properties through the new exploration menu.
Editable range selection	It is now possible to input exact values and do more precise selections.
Exporting a story	A story can be exported as a PowerPoint presentation.
Repository Snapshot Manager	The Repository Snapshot Manager (RSM) can be used to automate the backup and restore procedures.

37.1 Create

Managing data

Attach data files

You can now upload data files to an app on a server. The file is attached to the app, and you can load and select data to use in the app.

Creating apps and visualizations

Variables overview

In the variables overview, you can now get an overview of all variables in an unpublished app. From the overview, you can create, edit, and delete variables.

Auto-complete and color coding in the expression editor

When typing in the expression editor, you now get an auto-complete list of matching fields, variables, and functions to select from. The added color coding helps you to see where fields, variables, and functions are used in the expression.

Managing images

Media library

You can now find all the images you can use in the app in the media library.

Upload image

You can now upload images to the media library.

37.2 Discover

Interacting with visualizations

Visual exploration

The new exploration menu makes it possible to change some properties while analyzing. The menu is accessible when viewing a visualization in full-screen mode. It is available for line chart, bar chart, pie chart, and scatter plot. It is a simplified version of the properties panel, with the purpose of making data exploration faster and more easily accessible.

Editable range selection

It is now possible to input exact values and make more precise selections.

37.3 Collaborate

Data storytelling

Exporting a story

A story can be exported as a PowerPoint presentation.

37.4 Deploy

Planning Qlik Sense deployments

Backing up and restoring a site

The Repository Snapshot Manager (RSM) can be used to automate the backup and restore procedures.

Deploying Qlik Sense sites in cloud computing environments

Qlik Deployment Console system requirements

Added Microsoft Windows 10 as a supported platform.

37.5 Administer

Monitoring a Qlik Sense site

- The Monitoring apps now handle incomplete or malformed logs without failing during reload.
- The Monitoring apps now generate simple logs for tracking their own reload history.
- The QMC change history contains a more complete and detailed list of changes tracked by the Monitoring apps.
- The *Operations Monitor*’s *Errors and Warnings* table is updated to allow more timely access to other log entries associated with an error or warning.
- The *Operations Monitor* reports aborted reload tasks as well as successful and failed reloads.

- The *Operations Monitor* library includes two new heat map visualizations that can be used on customized sheets for performance monitoring.

38 What’s new in Qlik Sense 2.0?

Here are the highlights of the new and updated features in Qlik Sense 2.0:

Qlik DataMarket	The DataMarket service enables you to add data from external sources from directly within Qlik Sense. Data from a wide range of frequently-updated sources is available.
Data manager	A new tool for smart loading of data. The data manager uses a new, visual data profiling and modeling capability to make it easier to integrate data from multiple sources without the need to learn a scripting language.
App creation and visualization enhancements	Enhancements and improvements to visualizations include: improved map functionality and map data usage; smoother use of dimensions in pivot tables; calculation conditions can be added to most visualizations; scatter plots can use compressed data; various user interface enhancements.
Export	You can export and print visualizations and sheets as images or to PDF.
Improved search	Faster response times and smarter search behavior.

38.1 Working with Qlik Sense

Managing data

Data manager

You can now add data to your app from a multitude of data sources using the **Data manager**. This tool means you don't need to learn a scripting language to get your data into your apps. As you load, you will also get assistance with creating data relationships based on data profiling. **Data manager** also lets you edit your data selections and add or remove fields easily.

Qlik DataMarket

You can now add data from external sources with Qlik DataMarket. Qlik DataMarket offers an extensive collection of up-to-date and ready-to-use data from external sources accessible directly within Qlik Sense. Qlik DataMarket provides current and historical weather and demographic data, currency exchange rates, as well as economic and societal data.

Creating apps and visualizations

Map visualizations

You can now select to show/hide excluded values and zero values for map visualizations. A map will automatically scale when you resize the window. Improvements have been made to map functionality and design.

Selections in pivot tables

You can now select dimension values directly in the pivot table, without first having to open the dimension drop-down list.

Calculation condition

You can add a calculation condition to most objects (not **Filter pane** or **Text & image**). A calculation condition is set as an expression in the properties panel. The object is calculated only when the expression is fulfilled.

Compressed data in scatter plots

The scatter plot object now provides an overview of the density distribution in large data sets. You can zoom, pan and select data to narrow down the data set, while the context is preserved and shown in a mini chart.

User interface enhancements

The following enhancements have been implemented:

- The setting for conditional colors in KPI objects has been improved and now also updates in real time.
- The gauge visualization now has an arrow indicator for values that are outside of the defined range.
- Column content in table visualizations can now be aligned left, right, or automatically. You can change the setting in the properties panel.
- Improved functionality when making selections in range legends.
- Styling updates to tables and pivot tables.
- You can now convert KPI objects to/from other object types.

Discovering and analyzing

Smart search

The improved search function in Qlik Sense has faster response times, supports searches within selections and is able to search for dimensions. The user interface has been improved and mobile support has been added.

Managing apps

Duplicate apps

You can now duplicate any app you have access to on the hub. You can then work on your own copy, without changing the original, for example.

Delete apps

You can now delete any unpublished app from the hub.

Sharing and collaborating

Exporting a sheet

In Qlik Sense, you can export an entire sheet as a PDF file and print it.

Exporting a visualization

You can export a visualization as an image or to a PDF file.

Using data storytelling

Replacing snapshots on slides

When replacing a snapshot on a slide, you can now choose to navigate to the sheet and visualization from which the snapshot originated.

Showing slide numbers

When playing a story, you can now choose to display the number of the slide you are on and the total number of slides in the story.

Qlik Sense Desktop

Move apps

When you save an app that you have created in Qlik Sense Desktop, the images included in the app are bundled together with the rest of the contents of the app. This makes it easier to share an app with another person or move the app to another computer.

38.2 Deploying Qlik Sense

Planning Qlik Sense deployments

SAML

Qlik Sense supports the use of SAML V2.0 for user authentication.

Port added

Port 4239 has been added.

Qlik Sense Printing Service

Added a service that manages all export-related actions in Qlik Sense.

Qlik Sense Service Dispatcher

Added the Qlik Sense Service Dispatcher (QSD), which is a service controller that is used to launch and manage other Qlik Sense services. The following services are launched by the QSD: Migration Service, Data Profiling Service, and Chart Sharing Service.

New logging framework

Introduced a new logging framework. The legacy logging framework is still available in Qlik Sense, but it is now referred to as tracing.

Guidelines for deploying multi-node sites

Updated guidelines for how to deploy multi-node sites.

Added multi-node deployment scenario that includes a development node

Added a new multi-node deployment scenario that includes information on how to set up a development node.

Added multi-node deployment scenario for geographically dispersed sites

Added a multi-node deployment scenario for geographically dispersed sites.

Backing up and restoring a site

Improved the descriptions of how to backup and restore Qlik Sense sites.

Installing and upgrading

Installing

Installation is now optimized for Central and Rim nodes. Individual feature installation is dependent on the node type selected. Rim nodes can be installed as either Proxy, Engine, Proxy and Engine, or Scheduler where everything that is needed will be installed.

Modifying

The Rim node type can be switched to another type: Proxy, Engine, or Scheduler. Individual features can no longer be added or removed.

Uninstalling

Options have been added so you can remove all data and certificates during Qlik Sense uninstallation.

Updating

An update option is now available when Qlik Sense has been previously installed and a service release (version x.x.x) of the software is available to update the installation. A service release primarily includes software updates and fixes which are then applied to the existing version. Updates are installed without the need to remove earlier updates or the baseline program itself.

Uninstalling an update

Updates can also be uninstalled, in which case the updated version will be reverted back to either the previous service release version or major release version of Qlik Sense, whichever is applicable.

Deploying Qlik Sense sites in cloud computing environments

New user interface

The Sites view in the Qlik Deployment Console (QDC) has a new user interface that makes it easier to manage Qlik Sense sites.

Platform support

The Microsoft Windows Server 2012 R2 platform is now supported for the Qlik Deployment Console (QDC).

.NET framework version

The .NET framework version supported by the QDC is now version 4.5.2.

Amazon Simple Storage Service (S3) bucket

The instructions on how to copy files to the S3 bucket have been removed because the files are now copied automatically.

Firewall rule

A firewall rule, WINRM, has been added in the Security group rules for the Amazon Web Service (AWS) plug-in.

Timeout setting

A timeout setting, Time to wait for a free machine, has been added. The setting is used when the VMware vSphere plug-in is used with a machine pool.

38.3 Administering Qlik Sense

Managing a Qlik Sense site

New tables

New, improved tables have been implemented throughout the QMC. You can now select which columns to display and adjust the width of each column.

Search

You can now perform searches in almost all tables in the QMC. Search criteria can be arranged into subgroups and combined with column filtering.

Download of script log for reload tasks

From the QMC, you can now download script log files for reload tasks.

Monitoring a Qlik Sense site

The Qlik Sense monitoring apps have been redesigned with improved navigation and cleaner layout to take advantage of refinements in Qlik Sense logging that provide more relevant and concise data.

Operations Monitor

The *Operations Monitor* provides a more comprehensive and comprehensible view of reload tasks, user sessions and app usage. New Key Performance Indicators (KPI) make it easy to identify conditions and trends. New sheets and links between sheets make it easier to navigate and locate relevant data.

Troubleshooting Qlik Sense using logs

New help section

New help section that describes how to troubleshoot Qlik Sense using the logs produced by the Qlik Sense services.

39 What’s new in Qlik Sense 1.1?

Here are some of the highlights of the new and updated features in the release of Qlik Sense 1.1.

- New chart types: pivot table and KPI
- Date & time fields in visualizations
- Snapshots of maps
- Guidance after installation

39.1 Working with Qlik Sense

Creating apps and visualizations

Pivot table

You can use pivot tables to dynamically change the presentation of the data and focus on areas of interest.

KPI

You use the KPI to track performance. The KPI shows a main value, and, optionally, a complementary value.

Open apps without data

You can open an app without loading its data. This is useful, for example, when there are large amounts of data that would take a long time to load.

Sheet thumbnails

You can change the thumbnail for a sheet to make it easier to find in the app overview.

Duplicate sheets from the global menu

Using the global menu in the app overview or the sheet view, you can duplicate a sheet, even if you are editing or analyzing the sheet.

Edit sheets from shortcut menu

You can start editing a sheet by right-clicking the sheet in the app overview or in the sheet navigator.

Additional sheet details

The details for a sheet include information about when the sheet was published and updated, and by whom.

Date & time fields

You can now use date & time fields in visualizations. These fields are derived fields, which are defined by a calendar template in the data load script, and generated when the script is run. They appear in the assets panel.

Using data storytelling

Duplicate a slide

You can now duplicate a slide in a story.

Snapshots of maps
You can now take snapshots of maps.

Change the resize behavior of a snapshot
You can now change the resize behavior (keep aspect ratio) of a snapshot. When you unlock the snapshot you make it freely-resizable, which uses a progressive disclosure technique.

Story thumbnails
You can change the thumbnail for a story to make it easier to find it in the app overview.

Play stories from the shortcut menu
You can start playing a story by right-clicking/long-touching the story in the app overview or in the story navigator.

Additional story details
The details for a story include information about when the story was published and updated, and by who.

39.2 Deploying Qlik Sense

Installation and setup

Guidance after installation
Online help is now available to guide you through setting up your system when installation is completed.

39.3 Administering Qlik Sense

Managing a Qlik Sense site

Qlik Management Console user interface
The user interface theme in the QMC has been updated with better contrast and improved visual hierarchies. The action bar layout and style have been improved. There is also more table header information, and improved help documentation.

Virtual proxies and load balancing
Virtual proxies are now a separate resource and can be accessed directly from the QMC start page. Load balancing is now done on the virtual proxy level.

Monitoring a Qlik Sense site

Empty charts and tables
Explanatory text has been added to both the Operations Monitor and License Monitor chart and table visualizations when they are empty. The text explains why no data is presented.

Libraries for customizing monitoring apps
Both the Operations Monitor and License Monitor now contain libraries that provide access to the dimensions and measures used for their visualizations. You can use these dimensions and measures to create additional visualizations for your particular environment.

The libraries also include additional chart visualizations that can be added to custom sheets.

QMC Change Log sheet (Operations Monitor)

You can track changes made to the QMC settings on the new QMC Change Log sheet.

Reference lines (Operations Monitor)

Reference lines have been added to the 24-hour Summary and Performance History charts to indicate thresholds and 28-day averages for server CPU and RAM usage.

License usage by app

You can track the number of licenses and tokens used by individual apps on the new Usage by App sheet. The sheet shows the apps for which both login and user access passes are being used. The usage values are the passes that have been used, not the number of passes allocated.

Managing Qlik Sense sites in cloud computing environments

Local user group

A local user group is used to authorize the Qlik Deployment Console (QDC) users.

New ports for communication with QDC

New ports for http, https and SignalRPort are used by the QDC.