

Data Visualization Overview

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CLOUDERA

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Contents

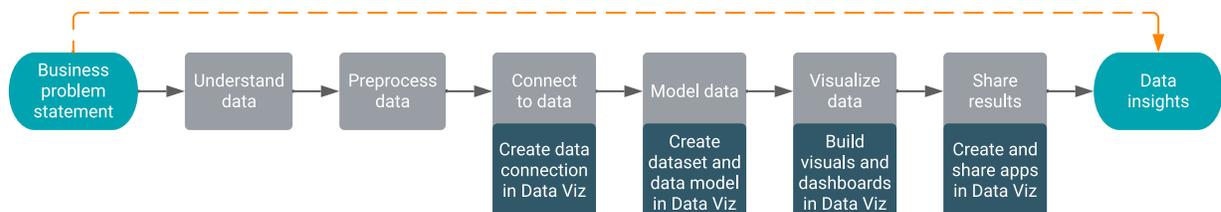
Data Visualization in the Cloudera Data Platform.....	4
Data Visualization user interface.....	4
Cloudera Data Visualization homepage.....	5
Cloudera Data Visualization, SQL interface.....	10
Cloudera Data Visualization, Visuals interface.....	11
Cloudera Data Visualization, Data interface.....	15

Data Visualization in the Cloudera Data Platform

Data Visualization in the Cloudera Data Platform (CDP) enables you to explore data and communicate insights across the whole data lifecycle by using visual objects. The fast and easy self-service data visualization streamlines collaboration in data analytics through the common language of visuals.

Data Visualization is integrated with Cloudera Machine Learning (CML) and Cloudera Data Warehousing (CDW) workflows in CDP Public Cloud. You can also use it on-prem with Cloudera Data Science Workbench (CDSW) workflows. You can use the same visualization tool for structured, unstructured/text, and ML analytics, which means deeper insights and more advanced dashboard applications. The user interface is highly intuitive and enables you to build customized data applications with minimum time investment.

Advanced data analysis helps you to find data insights that answer your business problems. You can connect to your data in CDP, create rich visualizations on top of your datasets, build informative dashboards and applications, and publish them anywhere across the data lifecycle. This provides you with a dynamic and data-driven insight in any line of business, and lets you and other stakeholders discover, explore, and curate visualizations.



Self-service data visualization for the full data lifecycle

You can quickly and easily explore data, collaborate, and share insights across the data lifecycle. Delivered as a native part of CDP, Data Visualization provides a consistent and easy to use data visualization experience with intuitive and accessible drag-and-drop dashboards and custom application creation.

Intelligent and automated reporting

You can automate analytics dashboards for updates and consumption. You can set rules for scheduled updates, email reports, and dynamic alerts to ensure everyone has access to the latest insights.

Accelerating collaboration

You can build and publish custom dashboards and analytic applications in minutes and you can collaborate across teams to reach stakeholders and decision makers more effectively. Data Visualization enables collaboration and transparency between data, analytics, and business teams without moving data to third party platforms.

Secure and integrated visualizations native to CDP

Data Visualization provides out of the box functionality without additional integration efforts, moving data, or creating security issues. From a security and governance perspective, native integration with CDP means SSO for authentication and seamless integration with Cloudera Shared Data Experience (SDX) to manage user access and governance.

Data Visualization user interface

The web interface of Data Visualization has four views: HOME, SQL, VISUALS, and DATA. When you log in, you land on the homepage (HOME view) where the menus that you can find on the Main navigation bar enable you to access the other two interfaces.

Cloudera Data Visualization homepage

Cloudera Data Visualization (CDV) enables you to explore data and communicate insights across the whole data lifecycle by using visual objects.

When you log into CDV, you are taken to the HOME screen, which is the starting point to your data visualization journey. It displays recent views, favorites, and the application's most-viewed content. You can start exploring sample dashboards or the in-tool Get Started guide.

Clicking HOME on the main navigation bar always takes you to the homepage.

The default CDV homepage has the following main parts:

1. Main navigation bar
2. Statistics banner

3. Preview area
4. Homepage side menu bar

For information on how to customize the homepage, see *Custom Homepages*.

Main navigation bar



The main navigation bar enables you to directly access the following interfaces and functions:

1. The HOME interface is described in this topic.
2. The SQL interface to manually build queries.
3. The VISUALS interface is for building visuals, dashboards, and applications. For more information, see *Visuals interface*.
4. The DATA interface for access to datasets, connections, and the Connection Explorer. For more information, see *Data interface*.
5. The search bar for natural language search. It is only visible if search is enabled in the Site Settings.
6. The notification center that contains application, server and site settings errors and warnings.

All users can see browser-level errors that might be affecting Cloudera Data Visualization. Additionally, for admin users and users with permission to view activity logs, webserver errors (such issues with applying advanced site settings) are also available in the notification center.

7. The Settings menu provides access to various setting options:
 - With Set Homepage, you can define a custom homepage.
 - With Job Status, you can check job statuses.

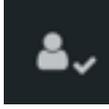
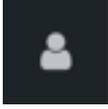
If you have administrative privileges, you can use Site Administration to make changes to the following functionalities:

- Activity Log displays all recorded events generated by the data processing requests.
 - Users & Groups helps you to manage accounts of all users and user groups, and grant them varying privileges and levels of access.
 - Manage Roles helps you to define roles as a set of privileges, and assign them to users or user groups.
 - Manage API Keys helps you to authenticate with the system to perform some of the administrative tasks.
 - Email Templates helps you to create separate email templates for communicating with various stakeholders, departments, or users who have clearly defined roles in the organization.
 - Custom Styles helps you to apply styling options for the appearance of visuals and applications.
 - Custom Colors helps you to define custom color palettes for styling visuals and applications.
 - Custom Dates helps you to define custom sets of date ranges and anchor them to a specific date and time.
 - Static Assets helps you to save and manage images, CSS files, and JS files as static assets and use them across all reports to standardize the appearance and behavior of visuals and dashboards.
 - Site Settings helps you to configure site-wide settings and settings at the level of individual visuals, dashboards, and filters.
8. Help provides you with the following links:
 - What's New in**
 - a summary of the major new features and improvements of the latest release
 - Documentation**
 - the official Cloudera Data Visualization documentation
 - Cloudera Support Hub**
 - access to the support and professional services portal on MyCloudera

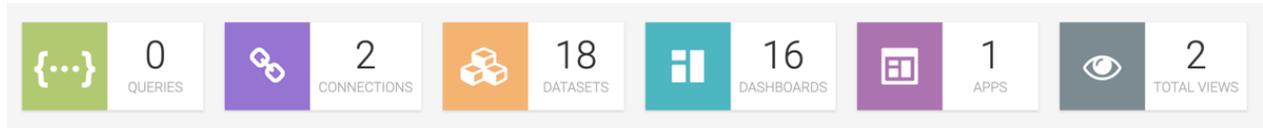
It also displays the release number of the running instance of Data Visualization.

9. The user management menu includes password change and logout options.

It also provides information on your last login date. The username displayed identifies the current user. The user icon can include small, additional icons to show if the current user is an admin or an LDAP/SSO user:

Admin user	SSO authenticated user	Admin and SSO authenticated user	Regular user
			

Statistics banner



This pane shows the number of **QUERIES**, **CONNECTIONS**, **DATASETS**, **DASHBOARDS**, and **APPS** that you can access in your Data Visualization instance. It also shows you the number of **TOTAL VIEWS**. You can click each tile to explore further details. By clicking the different tiles you can quickly access recent queries, data connections, and datasets, and can also open your their dashboards and applications.

If you click **TOTAL VIEWS**, you are directed to the Daily Usage tab of the Activity Log interface, where you can check the list of all activities, users, and dashboards in your Data Visualization instance. You can adjust the time interval you want to review (the default is 30 days), and you can download the data in CSV format.

Preview area

The screenshot displays the Cloudera Data Visualization user interface, organized into several sections:

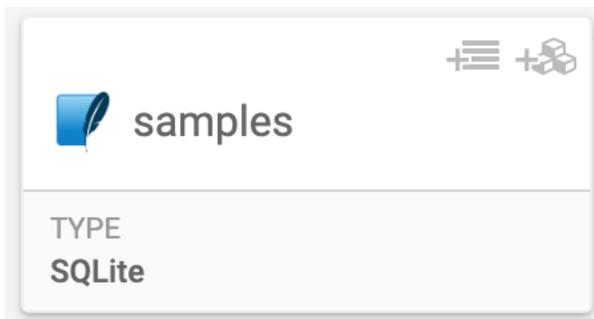
- Recent Queries:** A grid of query snippets, each with a SQL snippet, a connection name (e.g., % samples, % Impala - 6.3.3, % SQLite, % main.energy_data_3051_row), and a database icon.
- Recent Connections:** A grid of connection tiles for various databases like weblog, samples, SQLite, Chinoooks, Impala - 6.3.3, Hive - 6.3.3, DataViz Metadata, and mysql.
- Recent Datasets:** A grid of dataset tiles showing names like Cereals, Global Information Se..., AVG COUNT SQL, cdv_extract_from_sqllt..., NYC Taxicab Rides De..., NYC Taxicab Rides, Iris, and 2011_cereals, along with their column counts.
- Favorites:** A grid of dashboard thumbnails for 'Taxi rides application', 'Global Threats', and 'MISL_DONTACS'.
- Last Viewed by You:** A grid of dashboard thumbnails including 'Cereal Comparisons', 'Earthquakes Around the...', 'Census Dashboard', 'Trigger:', 'MISL_DONTACS', 'Global Threats', 'Taxi rides application', and 'US State Population Tre...'.
- Recently Created by You:** A grid of dashboard thumbnails including 'Trigger:', 'Clone of', 'Test Calories', '2001_rewrite_test', and 'VIZ-1758'.
- Overall Most Popular:** A grid of dashboard thumbnails including 'Wire Scores by Country', 'Census Dashboard', 'Noemi dashboard', 'Taxi rides application', and 'Dashboard - Classic Ro...'.
- Sample Dashboards:** A grid of dashboard thumbnails including 'Taxi rides application', 'Iris species w/ images', 'Consumer View', 'Inspector View', 'Time & Industry Threat...', 'Global Threats', 'Census Dashboard', 'US State Population Tre...', and 'Animated world populat...'.

The preview area provides quick access to the following items:

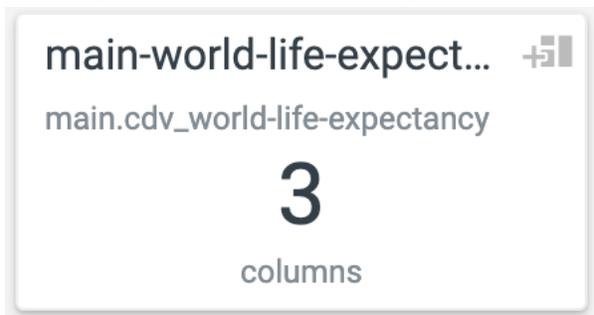
- Recent queries
- Recent connections
- Recent datasets
- Favorites
- Items you last viewed
- Items you recently created
- Overall most popular items
- Sample dashboards

You can click any of the tiles to explore the selected connection, dataset, visual, or dashboard.

The preview on connections displays tiles for the connections you recently worked with. The icons in the top-right corner of the tiles provide shortcuts to the Add Data modal and the New Dataset modal giving you an easy option to add data to a data connection or create datasets directly from the homepage.

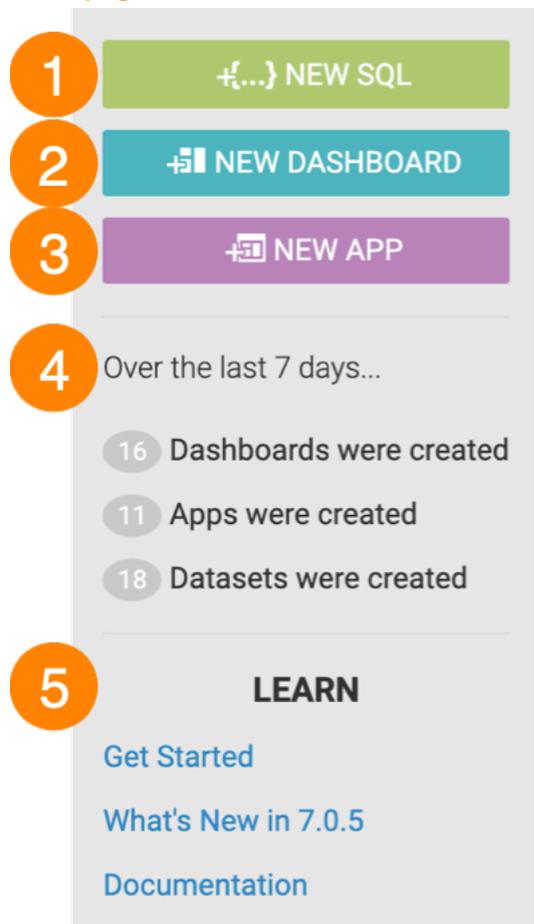


The preview on datasets displays tiles for the datasets you recently worked with. The icon in the top-right corner of the tiles provides a shortcut to creating a new dashboard on the selected dataset.



For instructions on how to add a dashboard to your favorites, see *Adding a dashboard to favorites*. Alternatively, you can access your bookmarked dashboards by clicking VISUALS on the main navigation bar and then clicking My Favorites in the side menu bar.

Homepage side menu bar



1. The NEW SQL button takes you to the Data Connection interface, where you can compose a SQL query.
2. The NEW DASHBOARD button takes you to the Dashboard Designer interface, where you can create new dashboards and visuals.
3. The NEW APP button takes you to the App Designer interface, where you can build and style custom BI applications from existing dashboards and visuals.
4. Over the last 7 days... includes statistics on how many dashboards, apps, and datasets have been created.
5. In the LEARN section, you can find the following information:
 - The Get Started link points to help content embedded in the tool.
 - The What's New in link opens a modal window showcasing new features.
 - The Documentation link opens this library.

Related Information

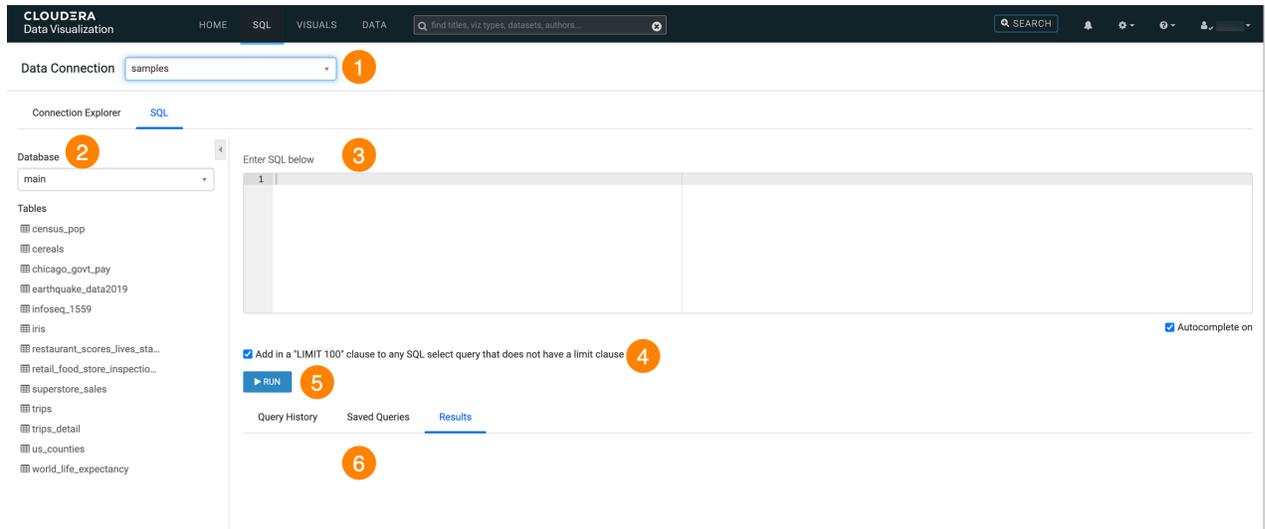
[Visuals interface](#)

[Data interface](#)

Cloudera Data Visualization, SQL interface

The SQL interface provides you with a SQL data query option. From the SQL tab, you can create a new dataset or dashboard from a query with a single click.

The SQL interface has the following main elements:

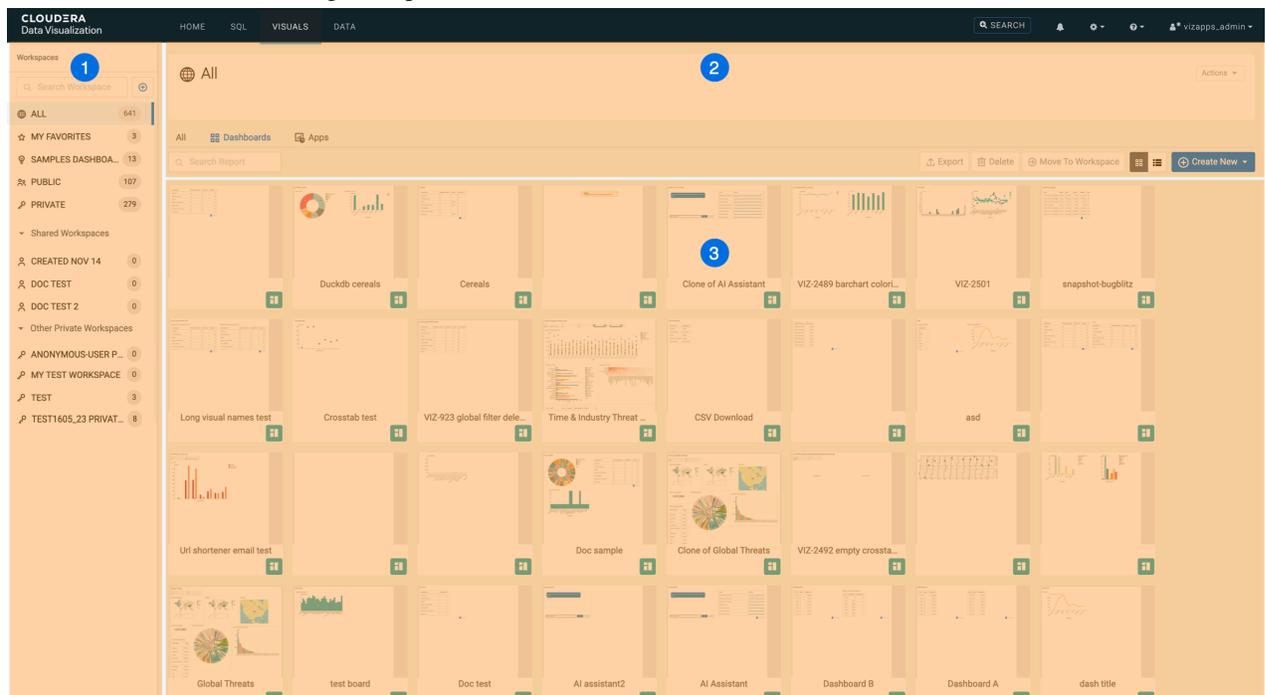


1. Data Connection – You can select any data source that is available in your project.
2. Database – On the SQL tab, you can select any database that is available on the selected data connection. When you select a database, the corresponding tables are displayed.
3. Textbox for SQL expression – You can add your SQL query here.
4. LIMIT 100 clause – You can automate the addition of a LIMIT 100 clause to your SQL SELECT queries when a limit is not specified in the query to retrieve a maximum of 100 rows from the database.
5. RUN – You need to click this button to process the SQL query that you have added.
6. Display tabs for Query History, Saved Queries and Results

Cloudera Data Visualization, Visuals interface

The VISUALS interface provides you access to visualization features. You can initiate a number of operations from here when working with visuals.

The interface has the following main parts:



1. VISUALS side menu bar

The sidebar displays the list of workspaces available in the environment. By default, Private and Public workspaces are available. You have the option to create custom workspaces, if needed. Once created, these custom workspaces are automatically added to this side menu bar. The number next to each workspace shows you how many dashboards are available in it.

Shared and Private workspaces are sorted and the lists can be collapsed for easier navigation.

- You can search among the workspaces using the search bar.
- You can create a workspace by clicking the plus sign next to Search Workspace.
- You can edit an existing workspace by clicking the (pencil) icon located next to the name of the workspace. The icon appears when you hover over the workspace name.



Note: You can see the (pencil) icon only if you have permission to edit the workspace.

For more information, see *Editing a workspace*.

- Using the side menu bar, you can access standard groupings of visual artifacts by clicking the following options:
 - All
 - My Favorites
 - Sample Dashboards
 - Public
 - Private



Note: Sample Dashboards provides access to a variety of example dashboards available within Cloudera Data Visualization. Get started by exploring these samples to see how they use a combination of visuals and filters to provide business insights.

2. VISUALS actions

- The Actions button in the top-right corner of the page allows you to edit or delete the workspace you are viewing.



Note: The button is only active if you have permissions to edit and/or delete the workspace.

For more information, see *Editing a workspace* and *Deleting a workspace*.

- The All, Dashboards, and Apps tabs allow you to switch between views displaying all visual artifacts, only dashboards, or only apps in the preview area.
- Search Report allows you to search among the artifacts of the workspace.
- The Export button allows you to export visual artifacts to your default download folder.



Note: The button is only active if you select at least one artifact in the preview area.

For more information about this function, see *Exporting and importing visual artifacts*.

- The Delete button deletes the selected items.



Note: The button is only active if you select at least one artifact in the preview area.

- The Move To Workspace button helps you to move the selected items to a new workspace.



Note: The button is only active if you select at least one artifact in the preview area.

For more information, see *Moving dashboards between workspaces* and *Moving apps between workspaces*.

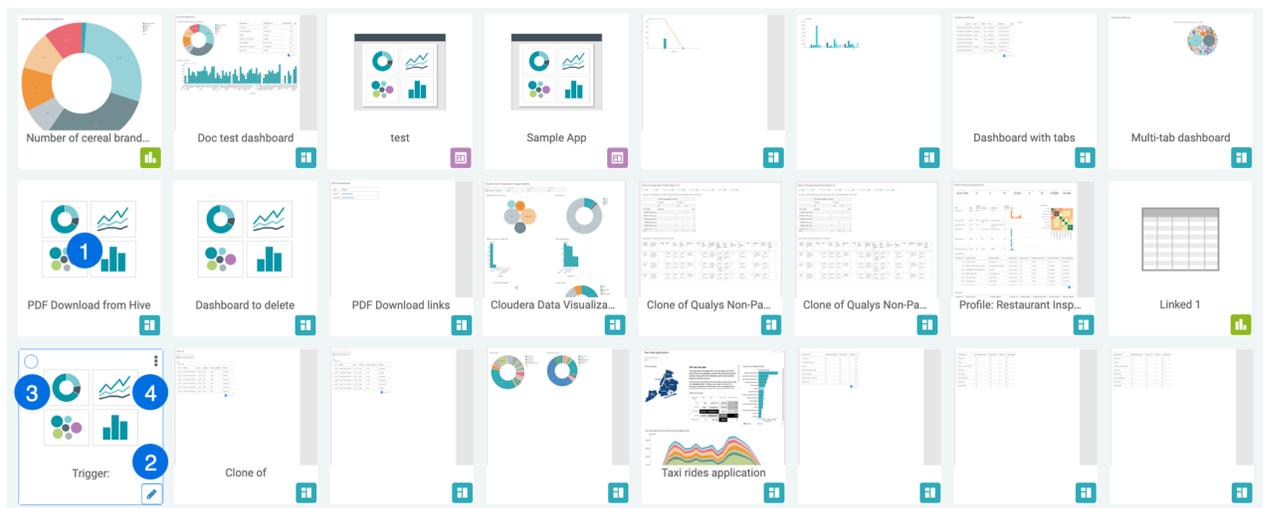
- The two icons   allow you to switch between Grid View and List View. Grid View shows thumbnail previews of your visuals, dashboards, and applications, while List View presents the same visual artifacts vertically arranged in a single, multi-line list.
- The Create New button allows you to start a new dashboard or app.

3. VISUALS preview area

All visuals artifacts of the selected workspace are displayed here in a grid or list view.

VISUALS interface – Grid view

Grid view shows you thumbnail previews of your visuals, dashboards, and applications.



1. You can open a visual artifact by clicking the tile.



Note: The icon in the bottom right corner of the tile shows you if the visual artifact is a dashboard (teal), a visual (green), or an app (purple).

2. You can open a visual artifact in Edit mode, if you hover over the tile and click the (pencil) icon in the bottom right corner.
3. You can select visuals, dashboards, or apps, if you hover over a tile and click the radio button in the the top left corner. You can deselect the selected artifact by clicking the circle again.



Note: When you select one or more items, the action buttons available in the top right corner of the preview area become active.

4. You can access the Supplemental menu of a visual artifact, if you hover over its tile. You can use this menu to export the visual artifact, move it to a different workspace, or delete it.

VISUALS interface – List view

List view presents the visual artifacts of a workspace arranged vertically in a single, multi-line list. It shows the title and the ID of the visuals, dashboards, and apps. It also shows the number of related dashboards/linked visuals and descendant dashboards.

It provides further metadata about each visual artifact including creation date, date of last update, name of the modifier, total views and the corresponding dataset and workspace.

<input type="checkbox"/>	Title	ID	Related Dashboards / Linked Visuals	Descendant Dashboards	Created	Last Updated	Modified By	Total Views	Dataset	Workspace	
<input type="checkbox"/>	 Number of cereal brands by manufacturer 1	4265	1 4266	0	Jan 22, 2024	3 hours ago	vizapps_admin	0	Cereals samples	Private	
<input type="checkbox"/>	 Doc test dashboard	4266	1 4265	0	Jan 22, 2024	3 hours ago	vizapps_admin	18	Cereals samples	Private	 
<input type="checkbox"/>	 Filter expressions for integer field	4258	0	0 Clone	Jan 16, 2024	6 days ago	roll_test	4	Superstore Sales impala-viz-team-odpdo-1	Private	 
<input type="checkbox"/>	 2	4253	0	1	Jan 12, 2024	11 days ago	roll_test	13	Superstore Sales impala-viz-team-odpdo-1	Public	3  
<input type="checkbox"/>	 4	4240	0	0	Jan 08, 2024	14 days ago	vizapps_admin	4	Cereals samples	Private	 
<input type="checkbox"/>		1429	0	0	Aug 15, 2022	18 days ago	roll_test	13	census samples	Private	 
<input type="checkbox"/>	 test hive	4222	0	0	Dec 20, 2023	a month ago	roll_test	11	cereal samples	Private	 
<input type="checkbox"/>	 test snowflake	4231	1 4089	0	Dec 20, 2023	a month ago	vizapps_admin	3	cereal 2050_CloneSamples	Private	5  
<input type="checkbox"/>	 weqwe	4089	2 4061,4231	0	Nov 10, 2023	a month ago	vizapps_admin	0	cereal 2050_CloneSamples	Public	

Showing 0 to 50 of 617 entries

1. You can open a visual artifact in View mode if you click the reduced size image or the title of the visual artifact.
2. You can open a visual artifact in Edit mode if you hover over the reduced size image of the artifact and click the (pencil) icon in the bottom right corner.
3. You can also click the (pencil) icon at the end of the row if you want to edit a visual artifact.
4. You can select a visual artifact if you mark the check box of the item. You can deselect the selected artifact by clicking the checkbox again.



Note: When you select one or more items, the action buttons available in the top right corner of the preview area become active.

5. You can delete a single visual artifact by clicking the (trash) icon at the end of its row.

Related Information

[Editing a workspace](#)

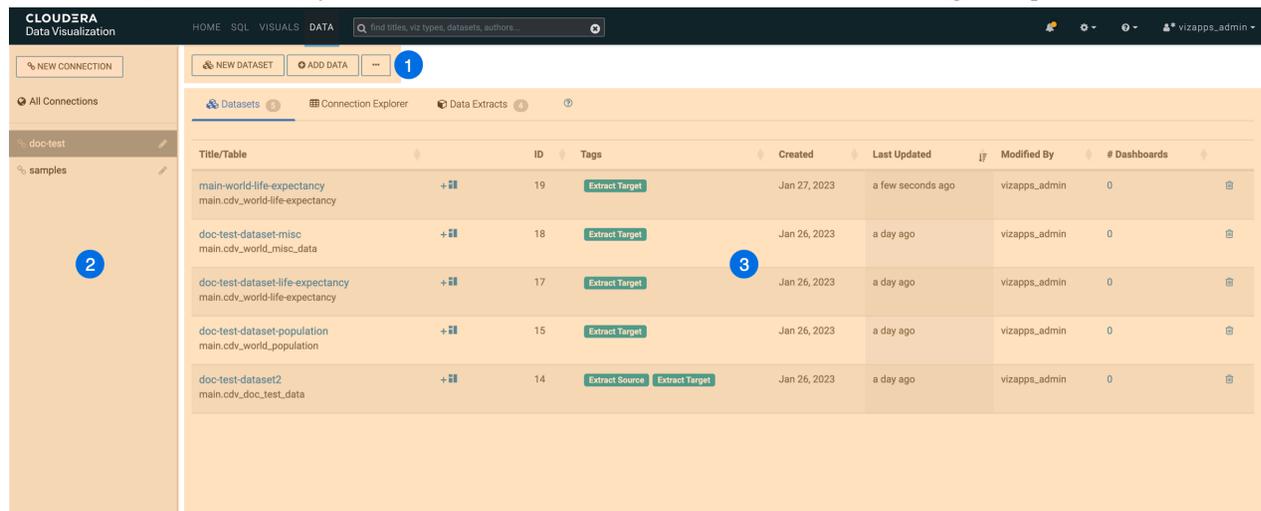
[Deleting a workspace](#)

- [Exporting and importing visual artifacts](#)
- [Moving dashboards between workspaces](#)
- [Moving apps between workspaces](#)
- [Homepage](#)
- [Data interface](#)

Cloudera Data Visualization, Data interface

The information and functionalities available on the DATA interface of Data Visualization enable you to manage the data you need for your visualizations and to initiate a number of operations when working with datasets and data extracts.

The DATA interface shows your existing data connections. You can also add new connections to data sources, create new datasets, and work with your data tables and extracts. The interface has the following main parts:



1. DATA interface top menu bar
2. DATA interface side menu
3. DATA interface preview area

DATA top menu bar



1. The NEW DATASET button is for creating datasets. Datasets are needed for developing dashboards and visuals. You can also start a new dataset from a specified table.
2. For SQLite connections, the ADD DATA button enables you to introduce data from outside sources to enrich your datasets.
3. The Supplemental menu provides access to additional functions:
 - Clear result cache forces a reload of the full table definition.
 - Import Visual Artifacts enables you to restore or import visual artifacts from a backup JSON file.
 - Direct Access lets you access data on the connections directly and build datasets from specific SQL queries, as opposed to starting with an existing table.

DATA side menu



1. The NEW CONNECTION button is for connecting to a new data source.
2. You can list all your datasets by clicking All Connections.
3. samples is the SQLite connection that contains the example datasets in CDP Data Visualization.

DATA preview area

The data preview area has three tabs: Datasets, Connection Explorer, and Data Extracts.

In the Datasets view, you can see all existing datasets on a connection available for creating visuals.

 A screenshot of the 'Datasets' view in the Cloudera Data Visualization interface. The view shows a table of datasets with the following columns: Title/Table, ID, Tags, Created, Last Updated, Modified By, and # Dashboards. The table contains five rows of data:

Title/Table	ID	Tags	Created	Last Updated	Modified By	# Dashboards
main-world-life-expectancy main.cdv_world-life-expectancy	19	Extract Target	Jan 27, 2023	a few seconds ago	vizapps_admin	0
doc-test-dataset-misc main.cdv_world_misc_data	18	Extract Target	Jan 26, 2023	a day ago	vizapps_admin	0
doc-test-dataset-life-expectancy main.cdv_world-life-expectancy	17	Extract Target	Jan 26, 2023	a day ago	vizapps_admin	0
doc-test-dataset-population main.cdv_world_population	15	Extract Target	Jan 26, 2023	a day ago	vizapps_admin	0
doc-test-dataset2 main.cdv_doc_test_data	14	Extract Source Extract Target	Jan 26, 2023	a day ago	vizapps_admin	0

In the Connection Explorer view, you can manage functions related to the data on a connection. You can check the databases and preview table details in the data connection.

The screenshot shows the Cloudera Data Visualization interface. At the top, there are navigation tabs for 'Datasets', 'Connection Explorer', and 'Data Extracts'. The 'main' sidebar on the left shows 13 databases. The main area displays a table with columns 'Table Name' and '# Datasets'. Below this, there are two tabs: 'Sample Data' and 'Datasets'. The 'Sample Data' tab shows a table with columns: id, name, age, cost, debt, altname, favoriteanimal, heartrate. The table contains 6 rows of data.

Table Name	# Datasets
census_pop	1
cereals	1
chicago_govt_pay	0
earthquake_data2019	1
generalTestForExploreCall	0
generaltest_1516160078	0
infoseq_1559	1
iris	1

id	name	age	cost	debt	altname	favoriteanimal	heartrate
1	austen	21	10000	0	a-dog	horse	71
2	trevor	33	203	30	t-money	cat	82
3	nathaniel	22	393	845.84	nate	dog	56
4	james	34	456	944.23	j-dog	seagul	99
5	jake	31	543	23.45	nate	dog	87
6	john	22	34	34.4	nate	dog	66

Showing 1 - 6 of 6 rows

1. The database area shows all databases that you can access through the current connection. Selecting a database displays its tables.
2. The Datasets column lists the number of datasets that use the particular table as their initial definition.
3. You can click the New dataset link to create a dataset on a specific table.
4. To see more information about data tables, you can click the row of each table. The additional information is displayed under two tabs: Sample Data and Datasets.

In the Data Extracts view, you can see all existing data extracts on a connection.

The screenshot shows the Cloudera Data Visualization interface in the 'Data Extracts' view. At the top, there are navigation tabs for 'Datasets', 'Connection Explorer', and 'Data Extracts'. Below the tabs, there is a summary bar with four colored boxes: 'DATA EXTRACTS' (4), 'SUCCESS' (4), 'NEVER RUN' (0), and 'ERRORS' (0). Below the summary bar is a table with columns: ID, Source Dataset, State, Target Datasets, Target Data Connection, Target Table, Schedule, and Last Successful Run.

ID	Source Dataset	State	Target Datasets	Target Data Connection	Target Table	Schedule	Last Successful Run
1	doc-dataset	Success	doc-test-dataset2	doc-test	main.cdv_doc_test_data	Manual	2023-01-26 12:24:27
2	doc-test-dataset2	Success	doc-test-dataset-population	doc-test	main.cdv_world_population	Manual	2023-01-26 12:33:57
3	doc-test-dataset2	Success	doc-test-dataset-life-expectancy	doc-test	main.cdv_world-life-expectancy	Manual	2023-01-26 13:52:49
4	doc-test-dataset2	Success	doc-test-dataset-misc	doc-test	main.cdv_world_misc_data	Manual	2023-01-26 14:11:43

1. Overall statistics
2. List of Data Extracts sourced from the current data connection

Related Information

[Custom homepages](#)

[Homepage](#)

[Visuals interface](#)

[Adding a dashboard to favorites](#)