

# Accessing Data Visualization in CDSW

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# CLOUDERA

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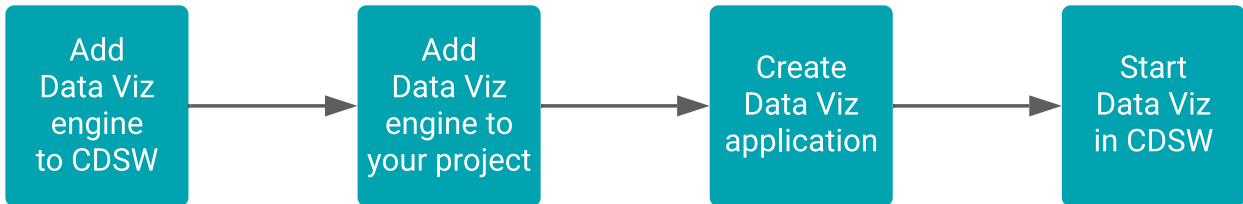
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## Accessing Data Visualization with ML Runtime

CDP Data Visualization is integrated with Cloudera Data Science Workbench (CDSW) workflows. You can use it in an on-prem environment by running it as a project application inside of CDSW. Learn how you can add a Data Visualization engine and create your application in the CDSW enterprise data science platform.



**Tip:** In CDP Public Cloud, you can also work with Data Visualization in:

- [Cloudera Machine Learning service](#)
- [Cloudera Data Warehouse service](#)

Follow these steps to set up your Data Visualization application in CDSW:

### Adding a custom Data Visualization engine to CDSW

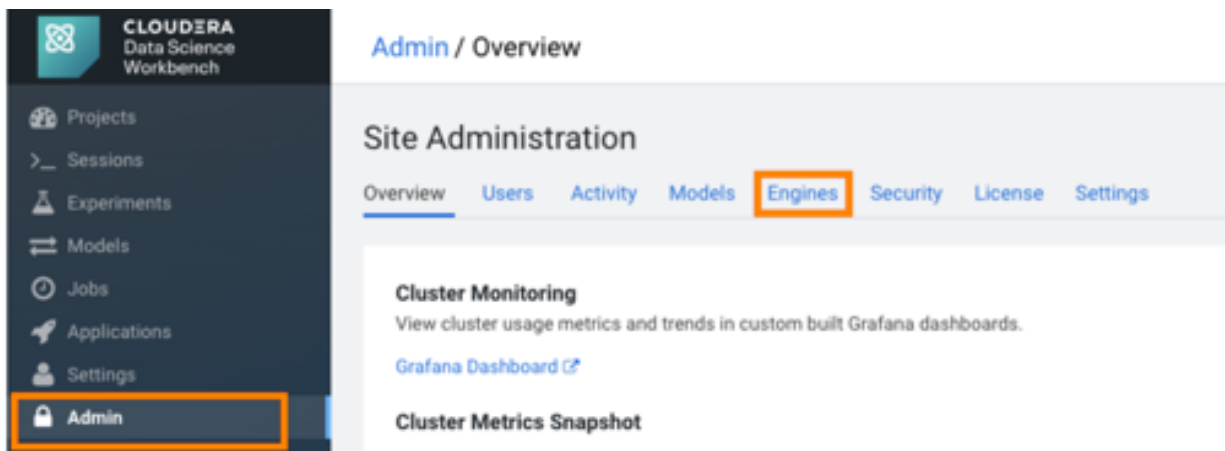
Learn how to add a Data Visualization engine to Cloudera Data Science Workbench.

#### Procedure

1. Go to the Cloudera Data Science Workbench web application and log in as a site administrator.
2. On the left sidebar, click Admin.

You will see an array of tabs for all the tasks you can perform as a site administrator.

3. Click the Engines tab.



- Provide a name for the Data Visualization engine that appears in your Engine list along with the full link to the docker image inside the Cloudera Docker Repository.

Use the following engine:

`docker.repository.cloudera.com/cloudera/cdv/cdswdataviz:6.4.2-b13`



**Note:** This is the docker image path of the latest released version for the 6.x line of Data Visualization. You can find path information for earlier versions in the Release Notes.



- Click Add.

**What to do next**

Add a Data Visualization engine to your CDSW project

## Adding a Data Visualization engine to your CDSW project

Learn how to add the custom CDP Data Visualization engine to a project in Cloudera Data Science Workbench.

**Procedure**

- On the left sidebar, click Projects.
- Select the project where you want to add your custom engine.
- Open Project Settings from the left sidebar and click the Runtime/Engine tab.

- Choose the Data Visualization image from the drop-down menu.

The screenshot shows the Cloudera Data Science Workbench interface. The breadcrumb navigation is 'juno / Cloudera - Internal Viz / Settings / Engine'. The 'Project Settings' page has tabs for 'Options', 'Engine', 'Tunnels', 'Editors', and 'Delete Project'. The 'Engine' tab is active. Under 'Engine Image', there is a dropdown menu with the selected value 'Viz Apps v6.2.0, docker.repository.cloudera.com/viz/odsengineviz:6.2.0'. Below this are sections for 'Environmental Variables' and 'Advanced Settings', including a 'Shared Memory Limit' field and a 'Save Advanced Settings' button.

- Click Save Engine.

### What to do next

Create a Data Visualization application in CDSW

## Creating a Data Visualization application in CDSW

Learn how to create a Data Visualization application in Cloudera Data Science Workbench.

### Procedure

- Go to a project's Overview page.
- On the left sidebar, click Applications.

3. Click New Application.

The screenshot shows the Cloudera Data Science Workbench interface. The left sidebar contains navigation options: All Projects, Overview, Sessions, Experiments, Models, Jobs, Applications (highlighted with an orange box), Files, Team, and Project Settings. The main header area displays the breadcrumb 'juno / Cloudera - Internal Viz / Applications' and a search bar. A 'New Application' button is highlighted with an orange box in the top right. Below this is a table of applications:

| Name   | Subdomain | Created By | Last Updated             | Status  | Actions   |
|--|-----------|------------|--------------------------|---------|-----------|
| Doc-test-application <a href="#">🔗</a><br><small>Overview Running since 2 weeks ago.</small> | doc-test  | juno       | 2020-10-14T09:10:17.960Z | Running | Actions ▾ |
| Data Viz <a href="#">🔗</a><br><small>Overview Running since September 19.</small>            | data-viz  | juno       | 2020-10-05T14:55:00.807Z | Running |           |

The version number '1.8.0-4968660 (19e3ca6)' is visible in the bottom right corner.

**4.** Provide the following details for your new application:

- Name – Enter a name for the application.
- Subdomain – Enter a subdomain that will be used to construct the URL for the web application. Make sure it contains URL friendly characters.
- Description – Enter a description for the application.
- Script - Select the path to the startup script.



**Note:** Use the script in the location: `/opt/vizapps/tools/arcviz/startup_app.py`.

- Engine Kernel – Select the kernel needed for this application.



**Note:** Use Python 3 to run the script as the application.

- Engine Profile – Select the computing resources needed for this application.



**Tip:** Choose an engine profile with 2 vCPU and 4 GiB RAM. A smaller engine profile also works but might have worse performance.



## Create an Application

### General

**Name \***

**Subdomain \***

**Description**

**Script \***

**i** Choose a script that hosts a web application on either CDSW\_READONLY\_PORT or CDSW\_APP\_PORT. Both ports acts the same as CDSW\_READONLY\_PORT in a Session because in an Application container, CDSW\_APP\_PORT is the same as CDSW\_READONLY\_PORT. This means that a user with at least read access to the project can view the web application. However, please note that it is upto you to make the application really read-only in terms of entities belonging to the project. In other words, CDSW does not prevent you from running an application that allows a viewer to modify files that belongs to the project.

**Engine Kernel**

Python 2

Python 3

R

Scala

5. Click Create Application.

### Results

In a few minutes, you should see the application status change to Running on the Applications page. The running application now has a hosted, fully-functional Data Visualization platform.

You can Stop, Restart, or Delete a CDSW application from the Actions drop-down menu on the Applications page.

If you want to make changes to an existing application, click Overview under the application name. Then go to the Settings tab to make any changes and update the application.

**What to do next**[Start Data Visualization in CDSW](#)

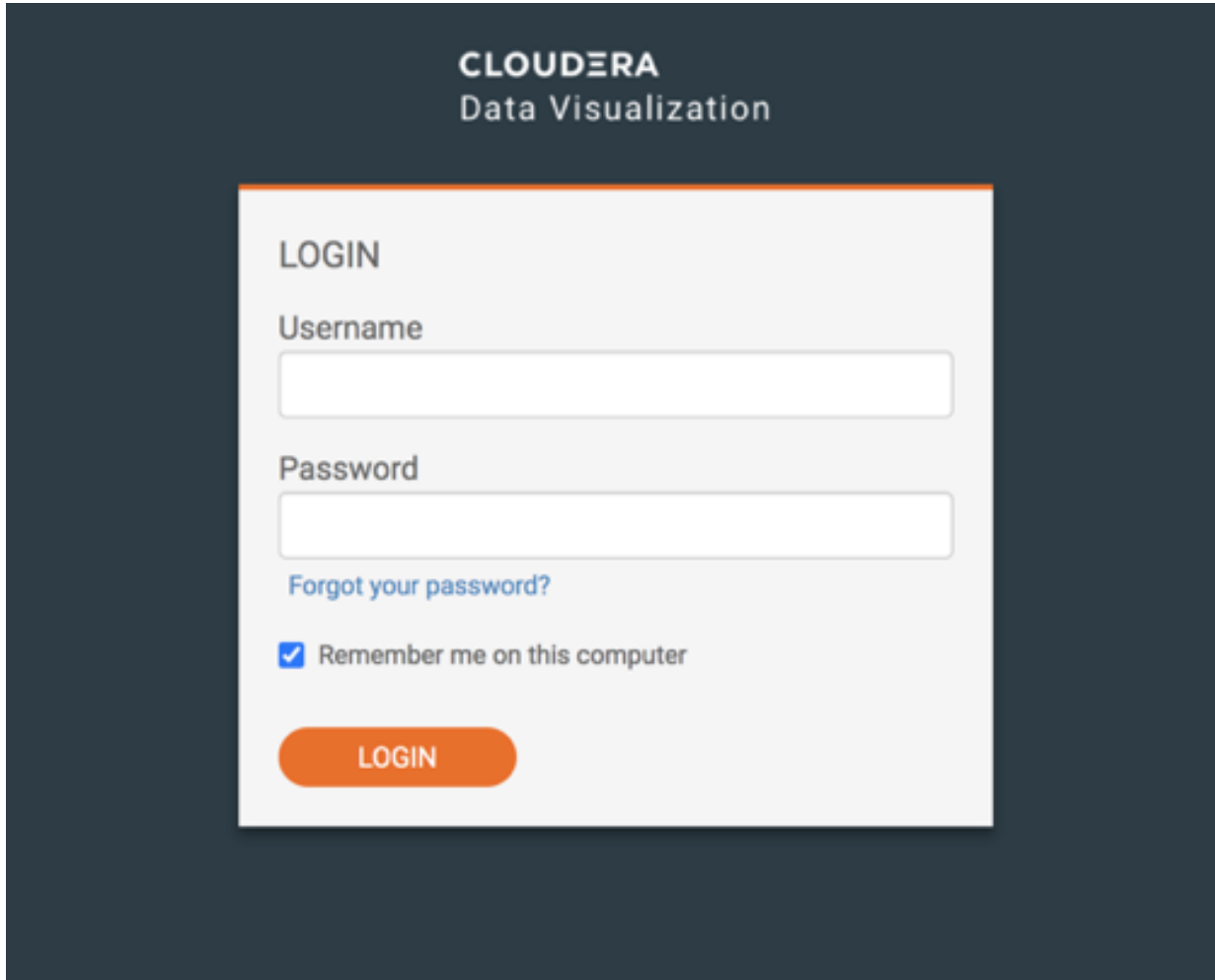
## Starting Data Visualization in CDSW

Learn how to start your Data Visualization application in Cloudera Data Science Workbench (CDSW).

**Procedure**

1. On the Applications page, click the name of your Data Visualization application to access the web interface.  
The Data Visualization application opens in a new browser tab.

2. Log in to Data Visualization by entering your username and password. Use your workload credentials.



The default credentials are:

- username: vizapps\_admin
- password: vizapps\_admin

When using the default credentials to log in to Data Visualization, you are prompted to change your password at the first login.



**Important:** If you use the default credentials, security issues may arise. Cloudera recommends that you change the default username and password.

SSO authentication is disabled by default. See [Setting authentication parameters](#) for information on how to permit user authentication with the CDSW login credentials and log users in automatically.

After logging in, you land on the homepage view of Cloudera Data Visualization. Here you can explore some sample dashboards or access the in-tool Get Started guide for help.

### Related Information

[Setting authentication parameters](#)

[Data Visualization in CDP](#)

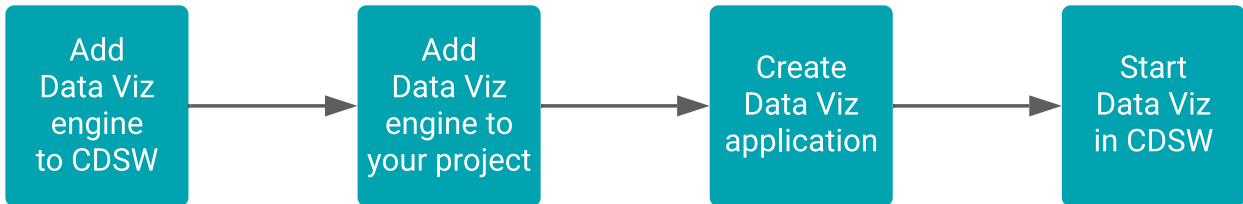
[User interface overview](#)

[Data Visualization quickstart](#)

[Connecting to a data source](#)

## Accessing Data Visualization with ML Runtime

Cloudera Data Visualization (CDV) is integrated with Cloudera Data Science Workbench (CDSW) workflows. You can use it in an on-prem environment by running it as a project application inside of CDSW. One option for accessing Data Visualization is to set ML Runtime as the default engine.



For more information about ML Runtimes, see [Managing ML Runtimes](#).



**Tip:** In CDP Public Cloud, you can also work with Data Visualization in:

- [Cloudera Machine Learning service](#)
- [Cloudera Data Warehouse service](#)

Follow these steps to set up your Data Visualization application in CDSW:

### Setting ML runtime as default engine in CDSW

Learn how to set Machine Learning (ML) Runtime as the default engine in Cloudera Data Science Workbench (CDSW).

#### Procedure

1. Go to the Cloudera Data Science Workbench web application and log in as a site administrator.
2. On the left sidebar, click Admin.

You will see an array of tabs for all the tasks you can perform as a site administrator.

3. Click the Runtime/Engine tab.
4. Select ML Runtime as the Default Engine.

#### Results

The default engine type of the workspace is updated. Now you can create a Data Visualization application. If you want to use ML Runtime only in selected projects, you can set it as a project-level engine in the Project Settings.

#### What to do next

[Add a Data Visualization engine to your CDSW project](#)

### Setting ML Runtime as engine in a CDSW project

Learn how to define ML Runtime as the default engine in your Cloudera Data Science Workbench (CDSW) project.

#### About this task



**Note:** You only need to set ML Runtime as your project engine if the CDSW workspace of your project is not set to use ML Runtime by default.

### Procedure

1. On the left navigation bar, click Projects.
2. Click the project where you want to set ML Runtime as the default engine type.
3. Open Project Settings from the left navigation bar and click the Runtime/Engine tab.
4. Select ML Runtime.

### What to do next

Create a Data Visualization application in CDSW using ML Runtime

## Creating Data Visualization application in CDSW using ML Runtime

Learn how to create a Data Visualization application when using ML Runtime in Cloudera Data Science Workbench (CDSW).

### Procedure

1. Go to a project's Overview page.
2. On the left sidebar, click Applications.
3. Click New Application.

The screenshot shows the Cloudera Data Science Workbench (CDSW) interface. The left sidebar is dark blue with a white navigation menu. The 'Applications' menu item is highlighted with an orange box. The main content area is light gray and displays the 'Applications' page. At the top right of the main area, there is a search bar and a user profile dropdown. Below this, there is a 'New Application' button highlighted with an orange box. The main content area contains a table with the following data:

| Name  | Subdomain | Created By | Last Updated             | Status  | Actions   |
|---|-----------|------------|--------------------------|---------|-----------|
| Doc-test-application<br><a href="#">Overview</a> Running since 2 weeks ago. | doc-test  | juno       | 2020-10-14T09:10:17.960Z | Running | Actions ▾ |
| Data Viz<br><a href="#">Overview</a> Running since September 19.            | data-viz  | juno       | 2020-10-05T14:55:00.807Z | Running |           |

#### 4. Provide the following details for your new application:

- Name – Enter a name for the application.
- Subdomain – Enter a subdomain that will be used to construct the URL for the web application. Make sure it contains URL friendly characters.
- Description – Enter a description for the application.
- Script - Select the path to the startup script.



**Note:** Use the script in the location: `/opt/vizapps/tools/arcviz/startup_app.py`.

- Kernel – Select Cloudera Data Visualization for the kernel supported by the Runtime variant of the CDSW project.
- Edition – Select the edition of the Runtime variant you want to use for your application.



**Note:** For Data Visualization, the selected edition automatically defines the version of the Runtime variant.

#### 5. Click Create Application.

### Results

In a few minutes, you should see the application status change to Running on the Applications page. The running application now has a hosted, fully-functional Data Visualization platform.

You can Stop, Restart, or Delete a CDSW application from the Actions drop-down menu on the Applications page.

If you want to make changes to an existing application, open Application Details and go to the Settings tab to make any changes and update the application.

### What to do next

[Start Data Visualization in CDSW](#)

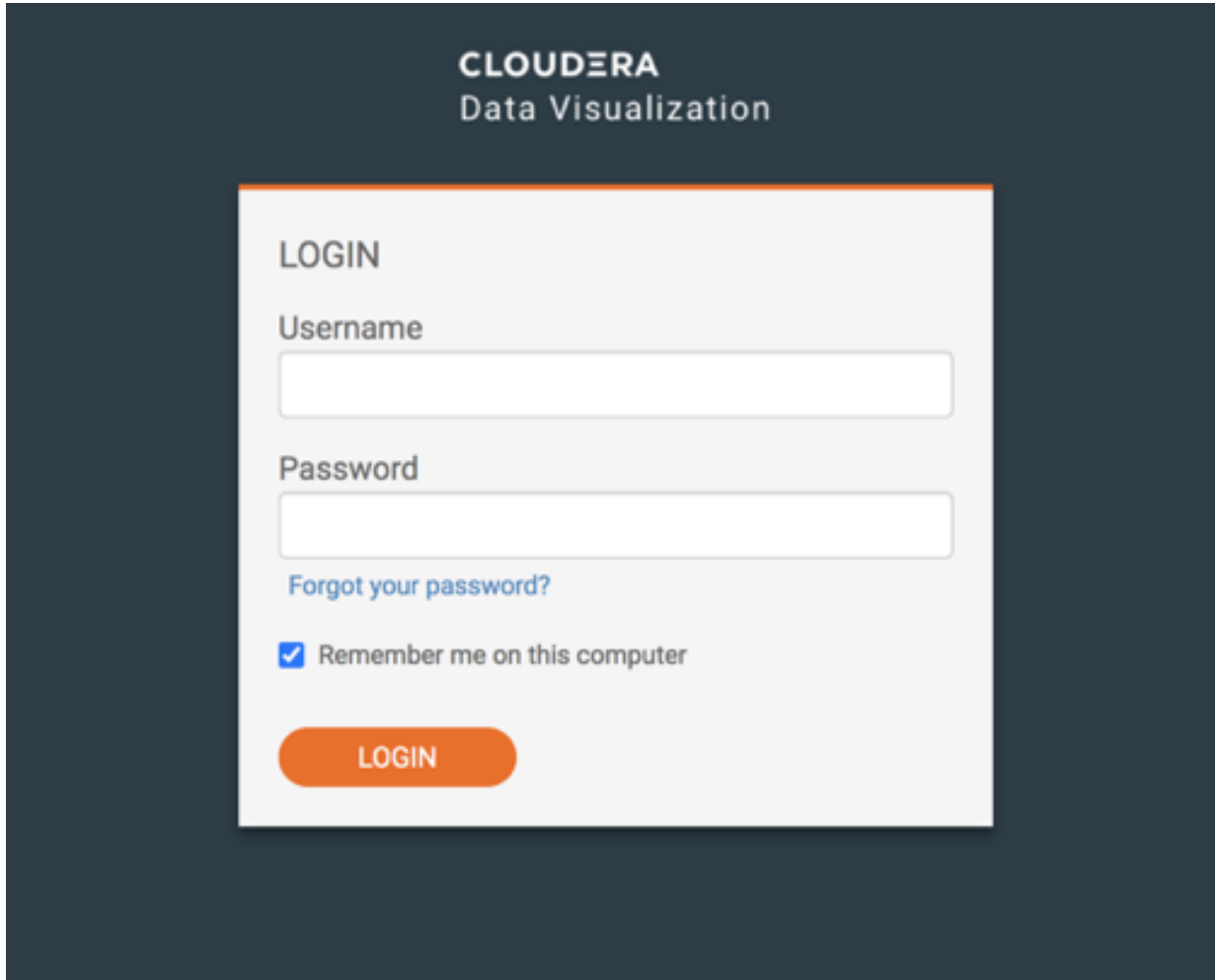
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Learn how to start your Data Visualization application in Cloudera Data Science Workbench (CDSW).

### Procedure

1. On the Applications page, click the name of your Data Visualization application to access the web interface. The Data Visualization application opens in a new browser tab.

2. Log in to Data Visualization by entering your username and password. Use your workload credentials.



The screenshot shows the Cloudera Data Visualization login interface. At the top, the Cloudera logo and 'Data Visualization' are displayed. Below this is a white login form with the following elements:

- LOGIN** header
- Username** label above a text input field
- Password** label above a text input field
- [Forgot your password?](#) link
- Remember me on this computer**
- LOGIN** button

The default credentials are:

- username: vizapps\_admin
- password: vizapps\_admin

When using the default credentials to log in to Data Visualization, you are prompted to change your password at the first login.



**Important:** If you use the default credentials, security issues may arise. Cloudera recommends that you change the default username and password.

SSO authentication is disabled by default. See [Setting authentication parameters](#) for information on how to permit user authentication with the CDSW login credentials and log users in automatically.

After logging in, you land on the homepage view of Cloudera Data Visualization. Here you can explore some sample dashboards or access the in-tool Get Started guide for help.

### Related Information

[Setting authentication parameters](#)

[Data Visualization in CDP](#)

[User interface overview](#)

[Data Visualization quickstart](#)

[Connecting to a data source](#)