

CDP One

Using Hue

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About using Hue

Hue provides a one-stop querying experience in Cloudera Data Platform (CDP) that leverages Hive and Impala SQL queries.

Accessing and using Hue

Get started using Hue by analyzing and visualizing your data with Impala and Hive SQL query engines.

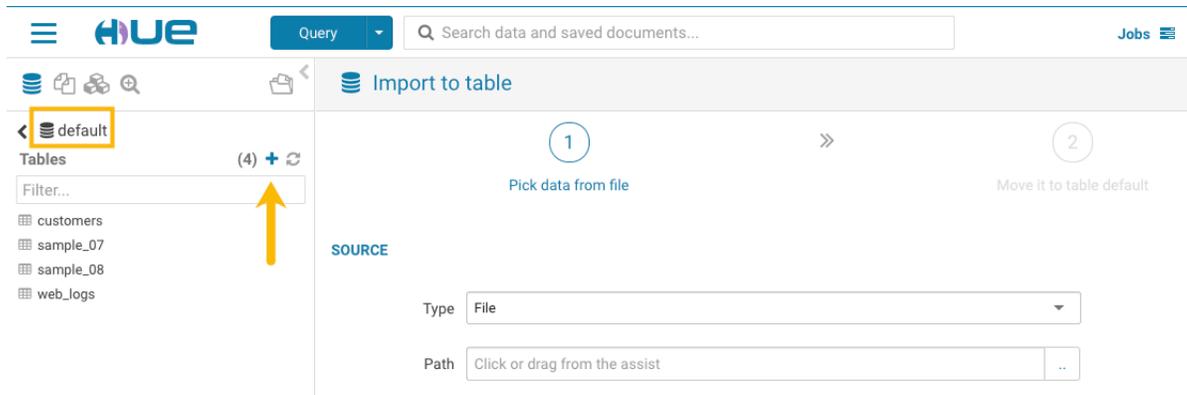
About this task

To try Hue without having an account, try running sample queries on <http://demo.gethue.com/>.

Procedure

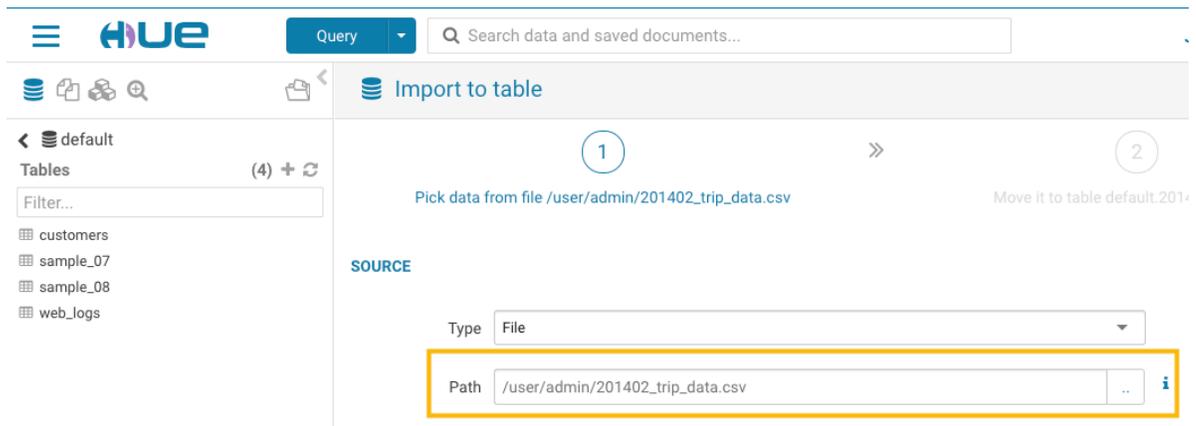
1. Download and unzip [one year of bike trips](#) from the Bay Area Bike Share program. This file is about 80 MB in size.

2. Create a table from the ~/babs_open_data_year_1/201402_babs_open_data/201402_trip_data.csv file found in the unzipped babs_open_data_year_1.zip file:
 - a) Click Query and Upload with Hue on the CDP One console to launch Hue.
 - b) In the left navigation panel of Hue, make sure the default database is selected, and click the plus sign to create a table as shown in the following image:



If the default database is not selected, click the "less than" icon  that is next to the database icon in the left panel. This enables you to select the default database.

- c) In the center panel Importer UI, set Type to File.
- d) Drag the 201402_trip_data.csv file to the Path field as shown in the following image:



- e) Set the formats as follows:
 - Field Separator = Comma (,)
 - Record Separator = New line
 - Quote Character = Double Quote

Then click Next at the bottom of the page.
- f) Set the properties Format = Text.
- g) Edit the FIELDS as follows:
 - Rename Bike # to Bike ID
 - Change the data type of ZipCode to string.
 - Remove all of the spaces in the Name fields.

Then click Submit at the bottom of the page.

3. Click Query at the top of the page and select Editor Hive to open the Hive editor and then create a query.

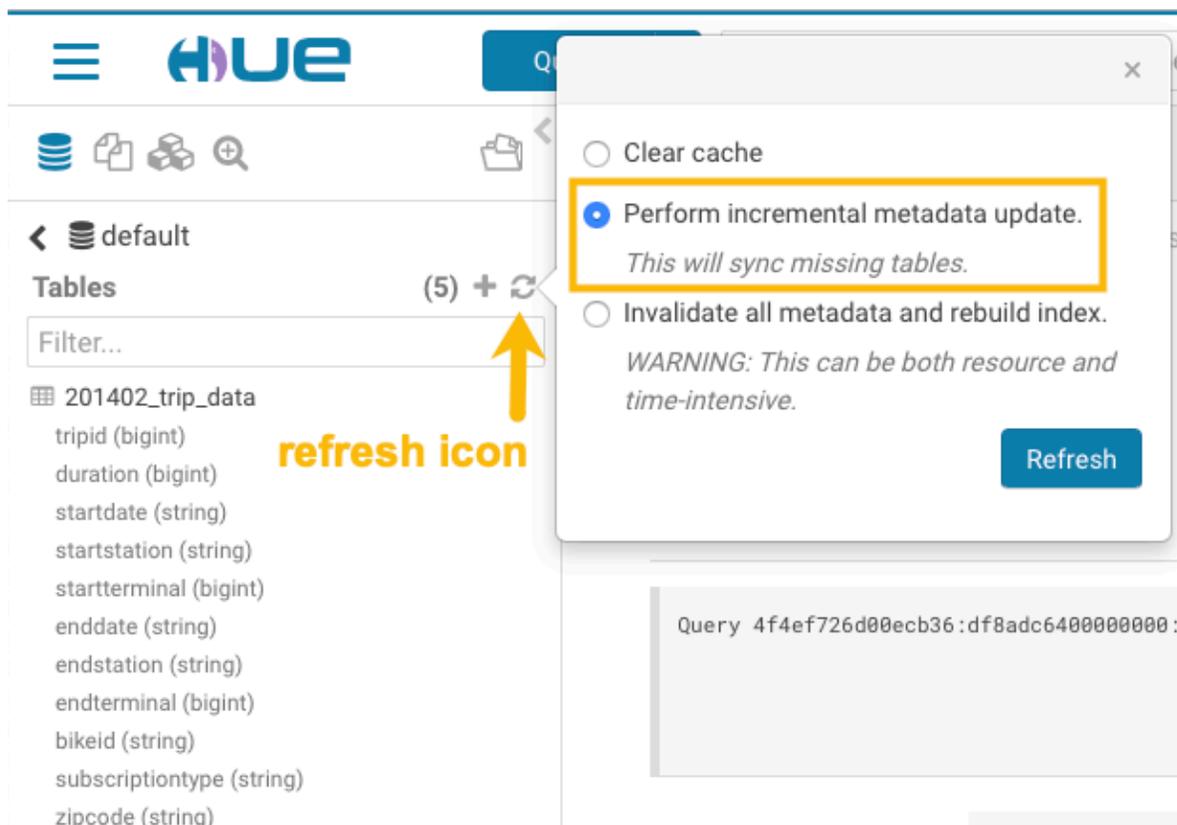
- Enter the following query into the editor window:

```
SELECT * FROM default.201402_trip_data
LIMIT 10;
```

Click the execute icon  to run the query. The following rows are returned:

	Query History	Saved Queries	Results (10)																																																						
			<table><thead><tr><th></th><th>201402_trip_data.tripid</th><th>201402_trip_data.duration</th><th>201402_trip_data</th></tr></thead><tbody><tr><td></td><td>1</td><td>4576</td><td>63</td><td>8/29/2013 14:13</td></tr><tr><td></td><td>2</td><td>4607</td><td>70</td><td>8/29/2013 14:42</td></tr><tr><td></td><td>3</td><td>4130</td><td>71</td><td>8/29/2013 10:16</td></tr><tr><td></td><td>4</td><td>4251</td><td>77</td><td>8/29/2013 11:29</td></tr><tr><td></td><td>5</td><td>4299</td><td>83</td><td>8/29/2013 12:02</td></tr><tr><td></td><td>6</td><td>4927</td><td>103</td><td>8/29/2013 18:54</td></tr><tr><td></td><td>7</td><td>4500</td><td>109</td><td>8/29/2013 13:25</td></tr><tr><td></td><td>8</td><td>4563</td><td>111</td><td>8/29/2013 14:02</td></tr><tr><td></td><td>9</td><td>4760</td><td>113</td><td>8/29/2013 17:01</td></tr><tr><td></td><td>10</td><td>4258</td><td>114</td><td>8/29/2013 11:33</td></tr></tbody></table>		201402_trip_data.tripid	201402_trip_data.duration	201402_trip_data		1	4576	63	8/29/2013 14:13		2	4607	70	8/29/2013 14:42		3	4130	71	8/29/2013 10:16		4	4251	77	8/29/2013 11:29		5	4299	83	8/29/2013 12:02		6	4927	103	8/29/2013 18:54		7	4500	109	8/29/2013 13:25		8	4563	111	8/29/2013 14:02		9	4760	113	8/29/2013 17:01		10	4258	114	8/29/2013 11:33
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	9	4760	113	8/29/2013 17:01																																																					
	10	4258	114	8/29/2013 11:33																																																					

4. Click Query at the top of the page and select Editor Impala to open the Impala SQL editor and then create a query.
 - a. In the left panel, click the refresh icon and select Perform incremental metadata update to make the new table visible to Impala:

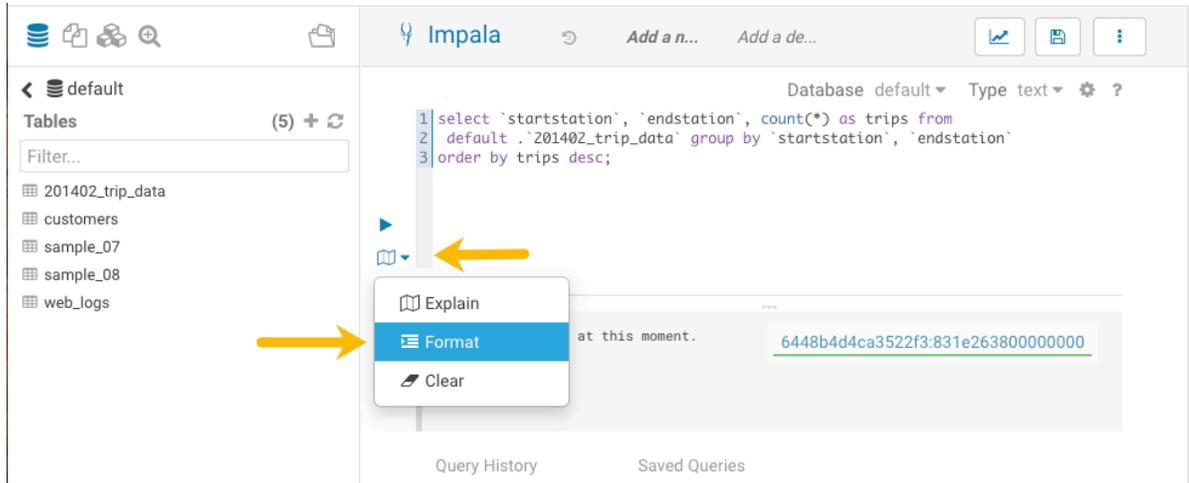


The screenshot shows the Hue interface with a modal dialog box open. The dialog box has three radio button options: 'Clear cache', 'Perform incremental metadata update.', and 'Invalidate all metadata and rebuild index.'. The 'Perform incremental metadata update.' option is selected and highlighted with a yellow box. Below this option is the text 'This will sync missing tables.'. The 'Invalidate all metadata and rebuild index.' option has a warning below it: 'WARNING: This can be both resource and time-intensive.'. A 'Refresh' button is located at the bottom right of the dialog box. In the background, the left panel shows a table list with a refresh icon (a circular arrow) and the text '(5) +'. A yellow arrow points to this refresh icon with the text 'refresh icon' written in yellow.

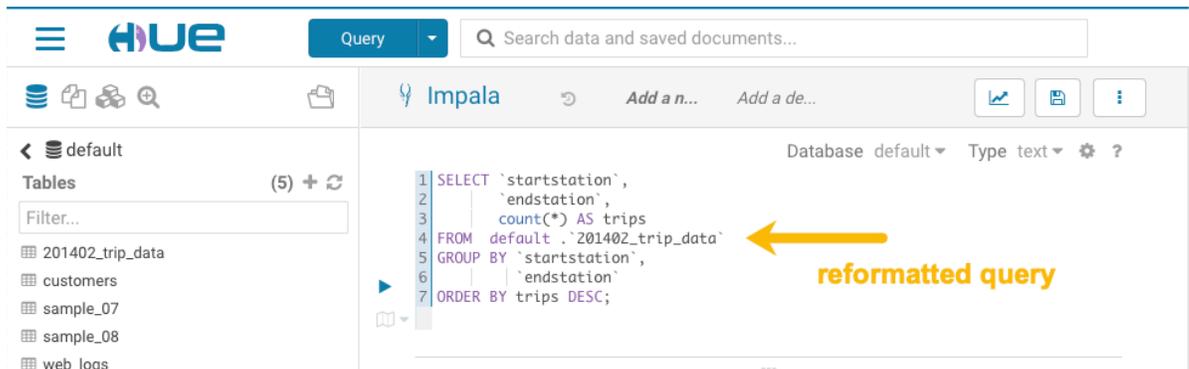
- b. Enter the following query into the editor window:

```
select 'startstation', 'endstation', count(*) as trips from default.'201402_trip_data'
group by 'startstation', 'endstation' order by trips desc;
```

c. Click the down arrow just under the execution icon and select Format:



This reformats the query:



d.

Click the save icon  , enter a query name, and click Save.

e.

Click the execute icon  to run the query.

5. Create a bar chart that is based on the query results:

a.



Click the chart icon and then select Bars.

Impala interface showing a query and its results. The query is:

```

1 SELECT `startstation`,
2        `endstation`,
3        count(*) AS trips
4 FROM default.`201402_trip_data`
5 GROUP BY `startstation`,
6          `endstation`
7 ORDER BY trips DESC;
    
```

The results table shows the top 10 stations by trip count:

startstation	endstation
1 Harry Bridges Plaza (Ferry Building)	Embarcadero at Sansome
2 Townsend at 7th	San Francisco Caltrain (Townsend at 4th)
3 San Francisco Caltrain 2 (330 Townsend)	Townsend at 7th
4 Market at Sansome	2nd at South Park
5 Embarcadero at Sansome	Steuart at Market
6 2nd at South Park	Market at Sansome
7 San Francisco Caltrain (Townsend at 4th)	Harry Bridges Plaza (Ferry Building)
8 2nd at Townsend	Harry Bridges Plaza (Ferry Building)
9 2nd at Townsend	Harry Bridges Plaza (Ferry Building)
10 2nd at Townsend	Harry Bridges Plaza (Ferry Building)

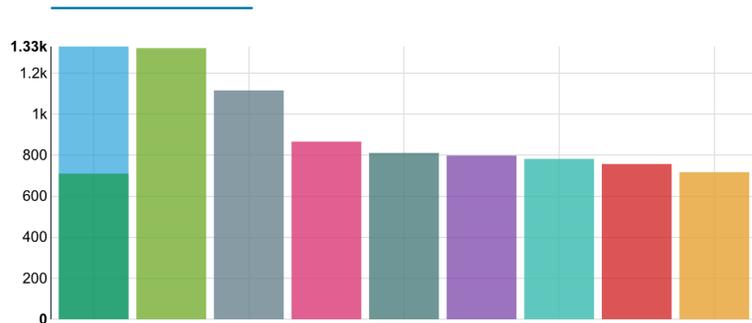
The 'Columns' panel on the left shows 'startstation' selected for the X-axis and 'trips' selected for the Y-axis. The 'Bars' chart type is highlighted in the chart type menu.

b. Set the bar chart elements as follows:

- X-AXIS = startstation
- Y-AXIS = trips
- LIMIT = 10

Configuration panel for the bar chart:

- TYPE: Bars
- X-AXIS: startstation
- Y-AXIS: trips
- GROUP: Choose a column to pivo...
- LIMIT: 10
- SORTING: [Icons for sorting options]



6.



Create a pie chart by clicking the chart icon again and then select Pie.

7.

Download the query results by clicking  and selecting in what format you want to download, copy, or export the results.

Using governance-based data discovery

Hue can use the metadata tagging, indexing, and search features available in Apache Atlas data management. After integrating Hue with Atlas, classifications and indexed entities can be accessed and viewed in Hue. This topic shows you how to use metadata classifications in Hue.

Integration between Hue and Atlas is enabled by default, but if your administrator has disabled it, it must be re-enabled before you can use governance-based data discovery.

You can create tags to classify your data both from Atlas and Hue.

Defining metadata tags

The first step to access and use metadata that is stored in Atlas is to define metadata tags in Hue. Then you can use the search and indexing capabilities from Atlas in Hue and add metadata to Atlas without leaving the Hue UI.

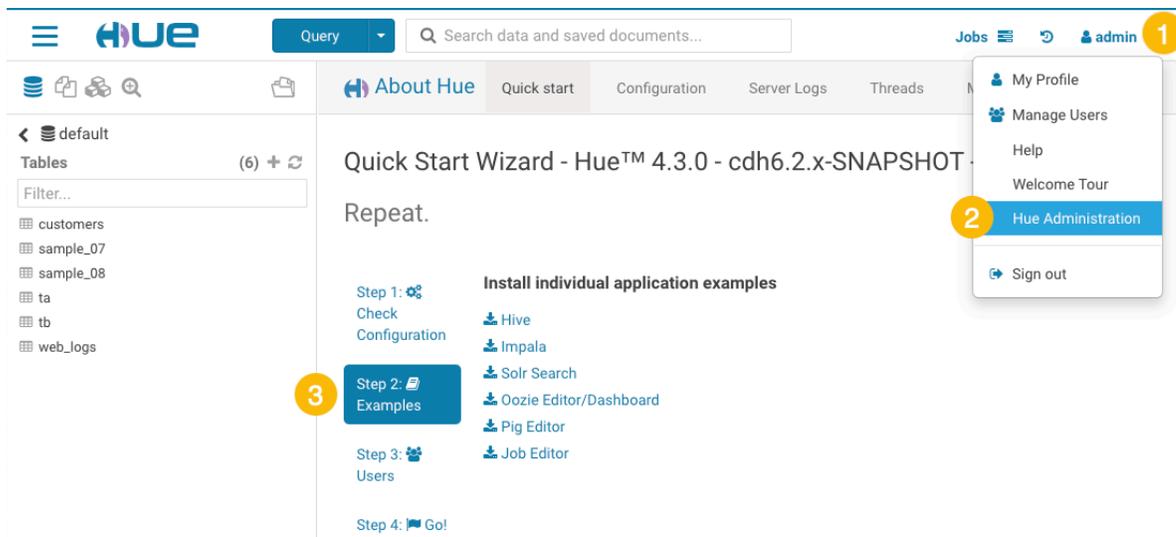
About this task

As the Hue administrator, install sample tables, and then refresh the metadata. This example uses Impala.

Procedure

1. Prepare Tables for Tagging

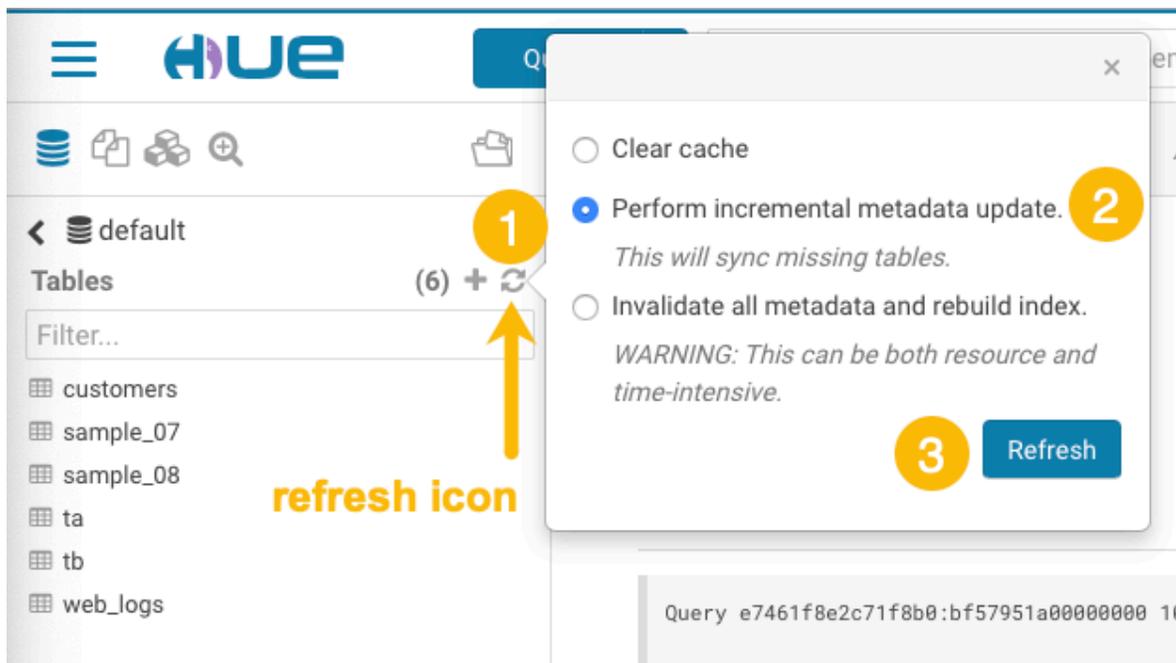
- a. In the Cloudera Manager Admin Console, launch Hue by selecting ClustersHueHue Web UIHue Load Balanced.
- b. In the top right corner of the page, select <user_name>Hue AdministrationStep 2: Examples



c.

Install the sample tables for Hive and Impala by clicking the download icons .

- d. At the top of the page, click Query and then select EditorImpala to go to the Impala SQL editor, click the refresh icon, select Perform incremental metadata update, and then click Refresh:



e.

In the upper left corner of the page, select the menu icon  and then select BrowsersTables to load the Table Browser.

- f.** In the Table Browser, click Refresh on the right side of the page. This ensures that the sample tables are available to work with in Hue.

2. Tag a Database, Table, and Field

a.



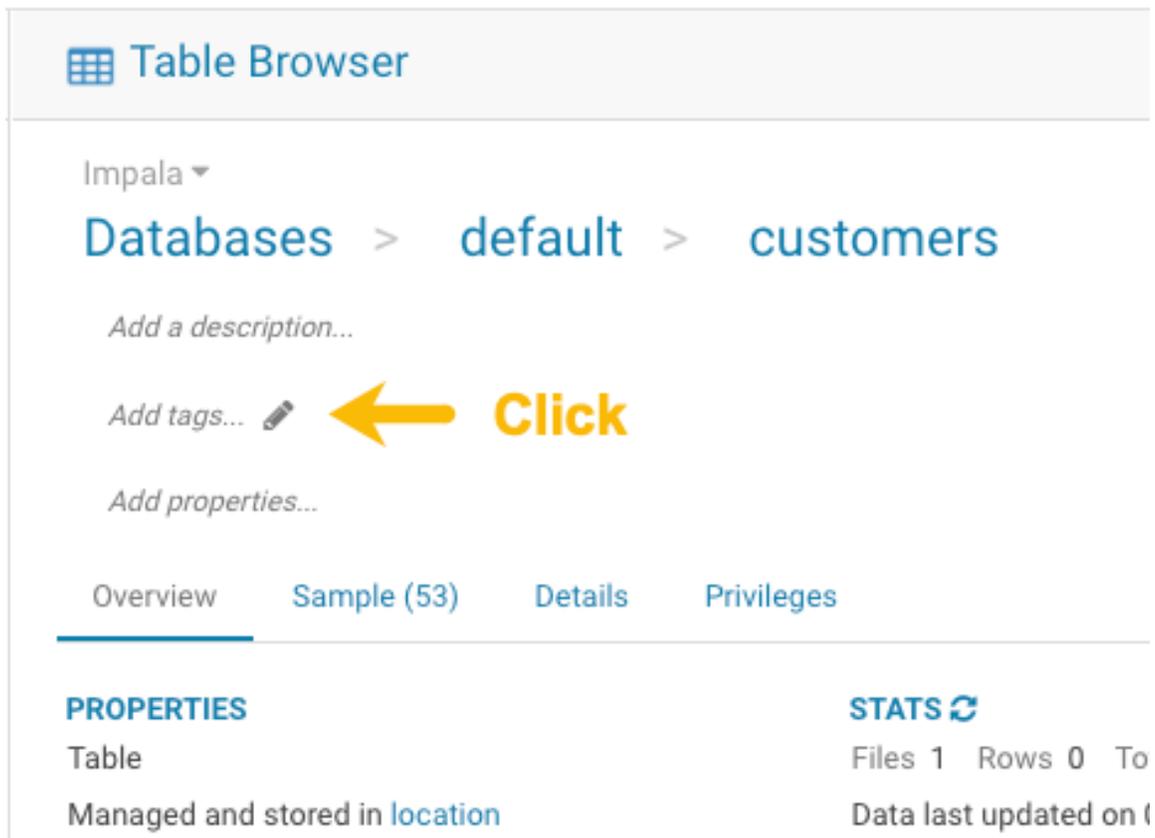
At the top of the Table Browser page, click the table icon to display the Databases page, and then click default or some other database. This loads a detail view of the database

b. To add a database tag, click Add tags..., enter a tag name in the text box, click Add <tag_name>..., and then click the check on the right to save the tag:



c. To add a table tag, click a table name, for example customers, which loads a detail view of the table where you can define a tag:

1. Click Add tags...:



2. Enter a tag name in the text box, click Add <tag_name>..., and then click the check on the right to save the tag. This is the same process you performed for tagging the database in Step 2.

d. To add a field tag:

1. Click the information icon by a column name:

Impala ▾

Databases > **default** > **customers**

Add a description...

test_table_tag

Add properties...

Overview Sample (53) Details Privileges

PROPERTIES **STATS** ↻

Table Files 1 Rows 0 Total size 15.44 KB

Managed and stored in [location](#) Data last updated on 7:02 AM

Created by admin on 7:02 AM

SCHEMA

Filter...

Column (5)	Type	Description
i id	int	Add a description...
i name	string	Add a description...
i email_preferences	struct	Add a description...

- In the dialog box that opens, click Add tags..., enter a tag name in the text box, click Add <tag_name>..., and then click the check on the right to save the tag.

Now, you have added tags to a database, a table, and a field (column) and you can search using these tag names.

Searching metadata tags

The SQL Editor in Hue provides a search text box where you can search on the metadata tags or classifications that are associated with your databases, tables, and columns.

About this task

You can search for tags or classifications in either the Hive or the Impala editors.

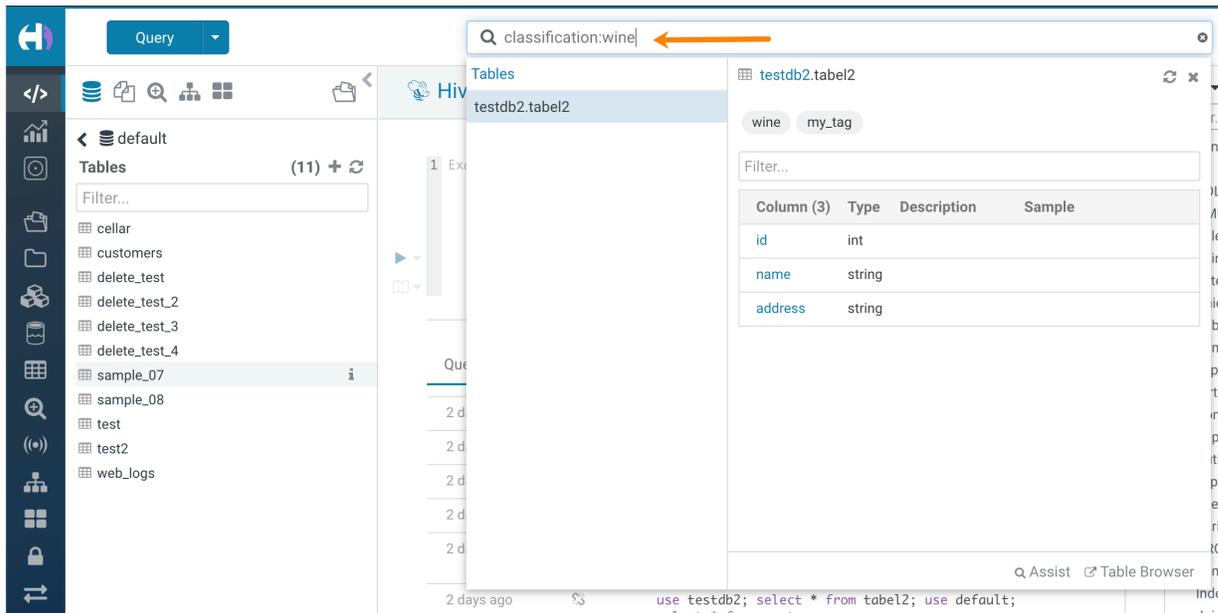


Note: On clusters that use Apache Ranger for role-based access control, the Search mechanism does not display counts of popular values. Ranger ensures that Hue users can view only entities to which their user role (as configured and managed by Ranger) has been granted specific permissions.

Procedure

- Go to Query Editor Impala or Hive.

- To locate the tags or classifications in Apache Atlas, in the metadata search box located just to the right of the Query drop-down menu, type a tag: or classification: facet followed by its name. For example, type classification: wine as shown in the following image:



After you type the search facet and the tag or classification name in the search box, the `<database>.<table>` where the tag or classification is found is returned. Click the `<database>.<table>` to view the tags and classifications that have been defined for it.

Supported non-ASCII and special characters in Hue

Auto-generated files may often introduce non-alphanumeric characters in the file and directory names that Hue does not support. This might cause the files or directories to not appear on the Hue File Browser. Review the list of non-alphanumeric, non-ASCII, diacritics (accents) characters supported in Hue for the following operations: upload, create, list in folder, view, and rename.

Table 1: Supported characters on HDFS

Special character symbol	Description	Filename support	Folder name support
~	Tilde	Fully supported	Fully supported
@	Ampersat	Fully supported	Fully supported
#	Hash	Partially supported. Not supported for rename operations.	Unsupported
\$	Dollar sign	Fully supported	Fully supported
&	Ampersand	Fully supported	Fully supported
(Left paranthesis	Fully supported	Fully supported
)	Right paranthesis	Fully supported	Fully supported
*	Asterisk	Fully supported	Fully supported
!	Exclamation mark	Fully supported	Fully supported
+	Plus	Fully supported	Fully supported
=	Equal	Fully supported	Fully supported
:	Colon	Unsupported	Unsupported

Special character symbol	Description	Filename support	Folder name support
;	Semicolon	Fully supported	Fully supported
,	Comma	Fully supported	Fully supported
.	Period	Fully supported	Fully supported
?	Question mark Not supported with Knox.	Fully supported	Fully supported
/	Forward slash	Unsupported	Unsupported
\	Backslash	Unsupported	Unsupported
'	Apostrophe or single quote	Fully supported	Fully supported
T#####-ääö	Non-standard alphabets with diacritics and accents.	Fully supported	Fully supported

Table 2: Supported characters on S3

Special character symbol	Description	Filename support	Folder name support
~	Tilde	Fully supported	Fully supported
@	Ampersat	Fully supported	Fully supported
#	Hash	Partially supported. Not supported for view and rename operations.	Unsupported
\$	Dollar sign	Fully supported	Fully supported
&	Ampersand	Fully supported	Fully supported
(Left paranthesis	Fully supported	Fully supported
)	Right paranthesis	Fully supported	Fully supported
*	Asterisk	Fully supported	Fully supported
!	Exclamation mark	Fully supported	Fully supported
+	Plus	Fully supported. Not supported for create operations on RAZ-enabled environments.	Fully supported
=	Equal	Fully supported	Fully supported
:	Colon	Unsupported	Unsupported
;	Semicolon	Fully supported	Fully supported
,	Comma	Fully supported	Fully supported
.	Period	Fully supported	Fully supported
?	Question mark Not supported with Knox.	Fully supported	Partially supported. Not supported for list, upload, and view operations.
/	Forward slash	Unsupported	Unsupported
\	Backslash	Partially supported. Not supported for upload operations.	Partially supported. Not supported for upload operations.
'	Apostrophe or single quote	Fully supported	Fully supported
T#####-ääö	Non-standard alphabets with diacritics and accents.	Fully supported	Fully supported

Table 3: Supported characters on ABFS

Special character symbol	Description	Filename support	Folder name support
~	Tilde	Fully supported	Fully supported
@	Ampersat	Fully supported	Fully supported
#	Hash	Partially supported. Not supported for view and rename operations.	Unsupported
\$	Dollar sign	Fully supported	Fully supported
&	Ampersand	Fully supported	Fully supported
(Left paranthesis	Fully supported	Fully supported
)	Right paranthesis	Fully supported	Fully supported
*	Asterisk	Fully supported	Fully supported
!	Exclamation mark	Fully supported	Fully supported
+	Plus	Fully supported	Fully supported
=	Equal	Fully supported	Fully supported
:	Colon	Unsupported	Unsupported
;	Semicolon	Fully supported	Fully supported
,	Comma	Fully supported	Fully supported
.	Period	Fully supported	Fully supported
?	Question mark Not supported with Knox.	Partially supported. Not supported for view and rename operations.	Partially supported. Not supported for list, rename, and view operations.
/	Forward slash	Unsupported	Unsupported
\	Backslash	Unsupported	Unsupported
'	Apostrophe or single quote	Fully supported	Fully supported
T#####-ääö	Non-standard alphabets with diacritics and accents.	Fully supported	Fully supported