

## [Hadoop]Hive\_Lab04\_Hue

### 학습 목표

가. GUI 환경에서의 Query 조회가 가능한 Hue에 대해 알아 볼 수 있다.

나. GUI 환경에서의 Query를 이용한 데이터 조회를 할 수 있다.

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### 1-1 Hue는 무엇일까?

- Hue(Hadoop User Experience)는 Apache Hadoop 클러스터와 함께 사용되는 웹 기반 사용자 인터페이스입니다.
- Hue는 다른 Hadoop 에코시스템과 함께 그룹화되어 Hive 작업 및 Pig 스크립트 등을 실행할 수 있습니다.
- Hue는 데이터를 탐색, 쿼리 및 시각화 하기 위한 오픈 소스 Analytics Workbench입니다.
- 하이버, 임팔라(Impala), 스파크(Spark), 피그(Pig), 맵리듀스(MapReduce), 오라클, Oracle, MySQL 등의 모든 SQL 편집이 가능하다.
- Jobs, HDFS, S3 Files, SQL Table, Indexes, Git files, Sqoop등의 활용이 가능하다.

### 1-2 Hue는 시작하기

#### (가) 로그인

Navigation -> Hue UI를 선택 후,

Applications Places System Wed Feb 20, 2:20 AM cloudera

Cloudera Live : Welcome! - Cloudera Live Beginner Tutorial - Mozilla Firefox

Cloudera Live : Welcom... x Cloudera Live : Welcom... x

quickstart.cloudera/#/ Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager Getting Started

cloudera LIVE

Navigation

- Guidance Page
- Tutorial
- Hue UI

Welcome to Your QuickStart VM!

Node	Address
Manager Node	10.0.2.15
Worker Node 1	10.0.2.15

Get Started

The tutorial below guides you through some analytic use cases, using the most popular open source tools included with CDH (including Cloudera Impala, Cloudera Search, and Hue).

Start Tutorial

로그인한다.  
cloudera/cloudera

The screenshot shows a web browser window titled "Hue - Quick Start - Mozilla Firefox". The address bar displays "10.0.2.15:8888/about/". The browser's toolbar includes a search bar and various navigation icons. Below the toolbar, a navigation menu lists "Query Editors", "Data Browsers", "Workflows", "Search", and "Security". The main content area is titled "Quick Start Wizard - Hue™ 3.10 - The Hadoop UI". It features a progress bar with four steps: "Step 1: Check Configuration" (active), "Step 2: Examples", "Step 3: Users", and "Step 4: Go!". The current step, "Checking current configuration", shows the configuration files located in "/etc/hue/conf.empty" and a message stating "All OK. Configuration check passed." At the bottom left, there are "Back" and "Next" buttons. At the bottom right, a disclaimer states "Hue and the Hue logo are trademarks of Cloudera, Inc."

The screenshot shows a web browser window titled "Hue - Quick Start - Mozilla Firefox". The address bar displays "10.0.2.15:8888/about/#step2". The browser's tab bar shows several tabs, including "Cloudera Live : ...", "Browsing HDFS", "Cloudera Live : ...", "Hue - Quick S...", and "Machine Learnin...". The browser's toolbar includes a search bar and various icons for navigation and settings.

The main content area of the browser displays the Hue Quick Start Wizard. The wizard has a navigation bar with the following tabs: "About Hue", "Quick Start" (which is the active tab), "Configuration", and "Server Logs". The "Quick Start" tab is highlighted with a blue underline.

The wizard's main heading is "Quick Start Wizard - Hue™ 3.10 - The Hadoop UI". Below the heading, there is a progress bar with four steps: "Step 1: Check Configuration", "Step 2: Examples" (which is the current step), "Step 3: Users", and "Step 4: Go!".

The "Examples" step is titled "Install individual application examples". Below this title, there is a list of application examples with download icons: "Hive", "Impala", "Solr Search", "Oozie Editor/Dashboard", and "HBase Browser".

At the bottom of the wizard, there are two buttons: "Back" and "Next". The "Next" button is highlighted with a blue background.

In the bottom right corner of the wizard, there is a small text note: "Hue and the Hue logo are trademarks of Cloudera, Inc."

Applications Places System Wed Jun 6, 7:38 AM cloudera

Hue - Quick Start - Mozilla Firefox

Cloudera Live : ... x Browsing HDFS x Cloudera Live : ... x Hue - Quick S... x Machine Learnin... x

10.0.2.15:8888/about/#step3 Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager

Query Editors Data Browsers Workflows Search Security

About Hue Quick Start Configuration Server Logs

## Quick Start Wizard - Hue™ 3.10 - The Hadoop UI

Step 1: Check Configuration Step 2: Examples Step 3: Users Step 4: Go!

### Create or import users

User Admin

### Tours and tutorials

☒ Display the "Available Tours" question mark when tours are available for a specific page.

Back Next

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Applications Places System Wed Jun 6, 7:39 AM cloudera

Hue - Quick Start - Mozilla Firefox

Cloudera Live : ... x Browsing HDFS x Cloudera Live : ... x Hue - Quick S... x Machine Learnin... x

10.0.2.15:8888/about/#step4 Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager

Query Editors Data Browsers Workflows Search Security

About Hue Quick Start Configuration Server Logs

## Quick Start Wizard - Hue™ 3.10 - The Hadoop UI

Step 1: Check Configuration Step 2: Examples Step 3: Users Step 4: Go!

Use the applications

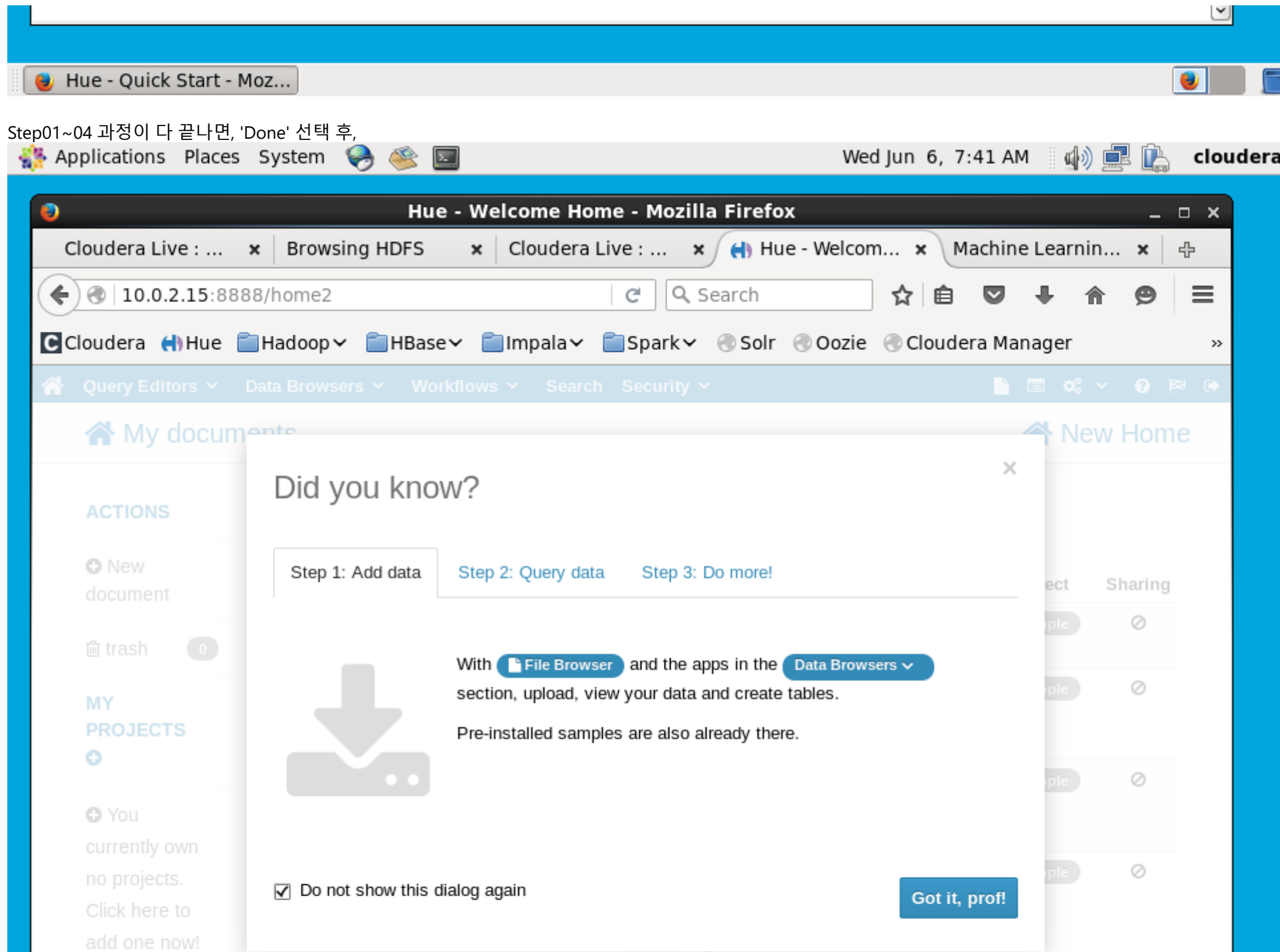
[Hue Home](#)

Skip wizard next time

☐ Skip the Quick Start Wizard at next login and land directly on the home page.

Back Done

Hue and the Hue logo are trademarks of Cloudera, Inc.





'Got it, prof!' 선택

## (나)데이터 베이스 만들기

Data Browsers -> Metastore Tables를 선택 후, 우측 상단의 '+'(Create a New Database) 선택한다.

Data Browsers 선택 후, Metastore Manager를 선택한다.



The screenshot displays the Metastore Manager application interface. At the top, a blue navigation bar contains several tabs: 'Query Editors', 'Data Browsers' (which is highlighted with a red rectangle), 'Workflows', 'Search', and 'Security'. To the right of these tabs are several utility icons. Below the navigation bar, the main area is titled 'Metastore Manager'. On the left side of this area, there is a sidebar with a 'default' folder icon and a list of 'Tables' under the 'default' folder: 'customers', 'sample\_07', 'sample\_08', and 'web\_logs'. The main content area is titled 'Databases' and features a search bar with the placeholder text 'Search for a database...' and a 'Drop' button. Below the search bar, there is a section titled 'Database Name' with a list of databases, including 'default'.

Applications Places System Wed Feb 20, 2:28 AM cloudera

Hue - Metastore Manager - Metastore - Mozilla Firefox

Cloudera Live : Welcom... x Cloudera Live : Welcom... x Hue - Metastore Ma... x

10.0.2.15:8888/metastore/databases Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager Getting Started

HUE Query Editors Data Browsers Workflows Search Security

Metastore Manager

default (4) Q

customers sample\_07 sample\_08 web\_logs

Databases

Search for a database... Drop

Database Name

default

No Items in Trash

데이터 베이스 이름(Database Name)를 입력 후, 해당 데이터 베이스에 대한 설명(Description)을 넣는다. 설명(Description)넣어도 되고 안넣어도 된다.

Applications Places System Wed Feb 20, 2:30 AM cloudera

Hue - Metastore Manager - Create database - Mozilla Firefox

Cloudera Live : Welcom... x Cloudera Live : Welcom... x Hue - Metastore Manag... x

10.0.2.15:8888/beeswax/create/database#step/1 Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager Getting Started

Hue

Query Editors ▾ Data Browsers ▾ Workflows ▾ Search Security ▾

## Metastore Manager

< default

Tables (4) 🔍 ↺

- customers
- sample\_07
- sample\_08
- web\_logs

### Create a database

Let's start with a name and description for where we'll store your data.

Database Name

Name of the new database. Database names must be globally unique. Database names tend to correspond to the directory where the data will be stored.

Description

Use a database comment to describe the database. For example, note the data's provenance and any caveats users need to know.

Next

Hue - Metastore Mana...

'Create database'를 선택한다.

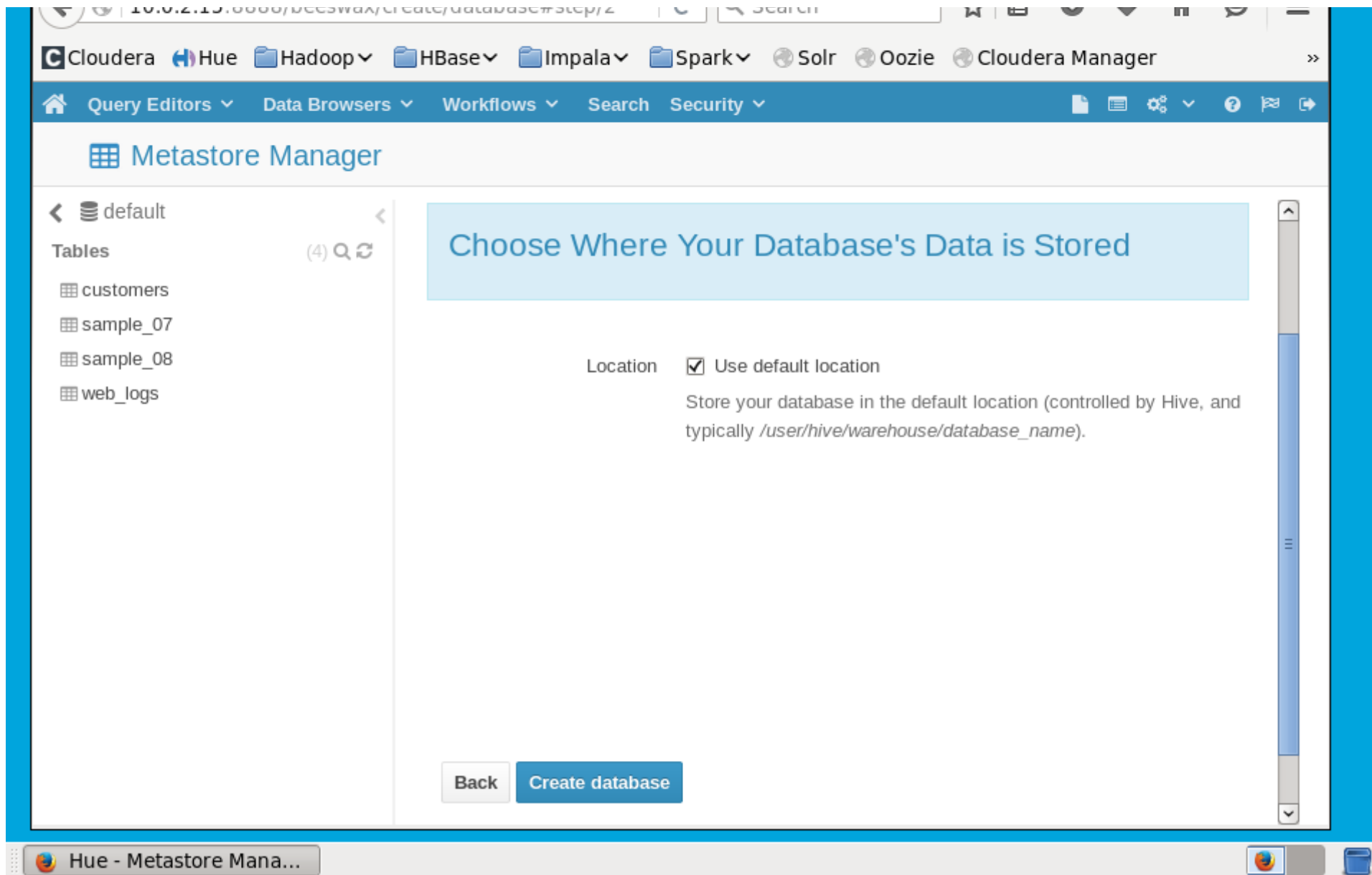
Applications Places System

Wed Jun 6, 7:47 AM cloudera

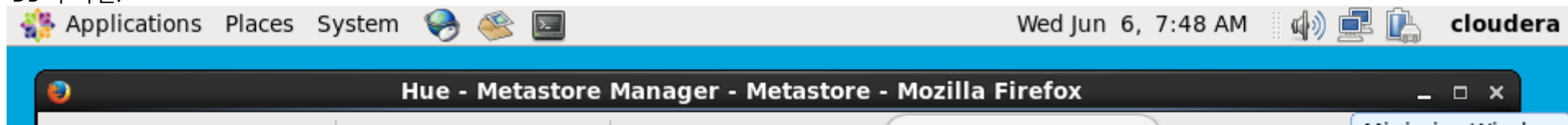
### Hue - Metastore Manager - Create database - Mozilla Firefox

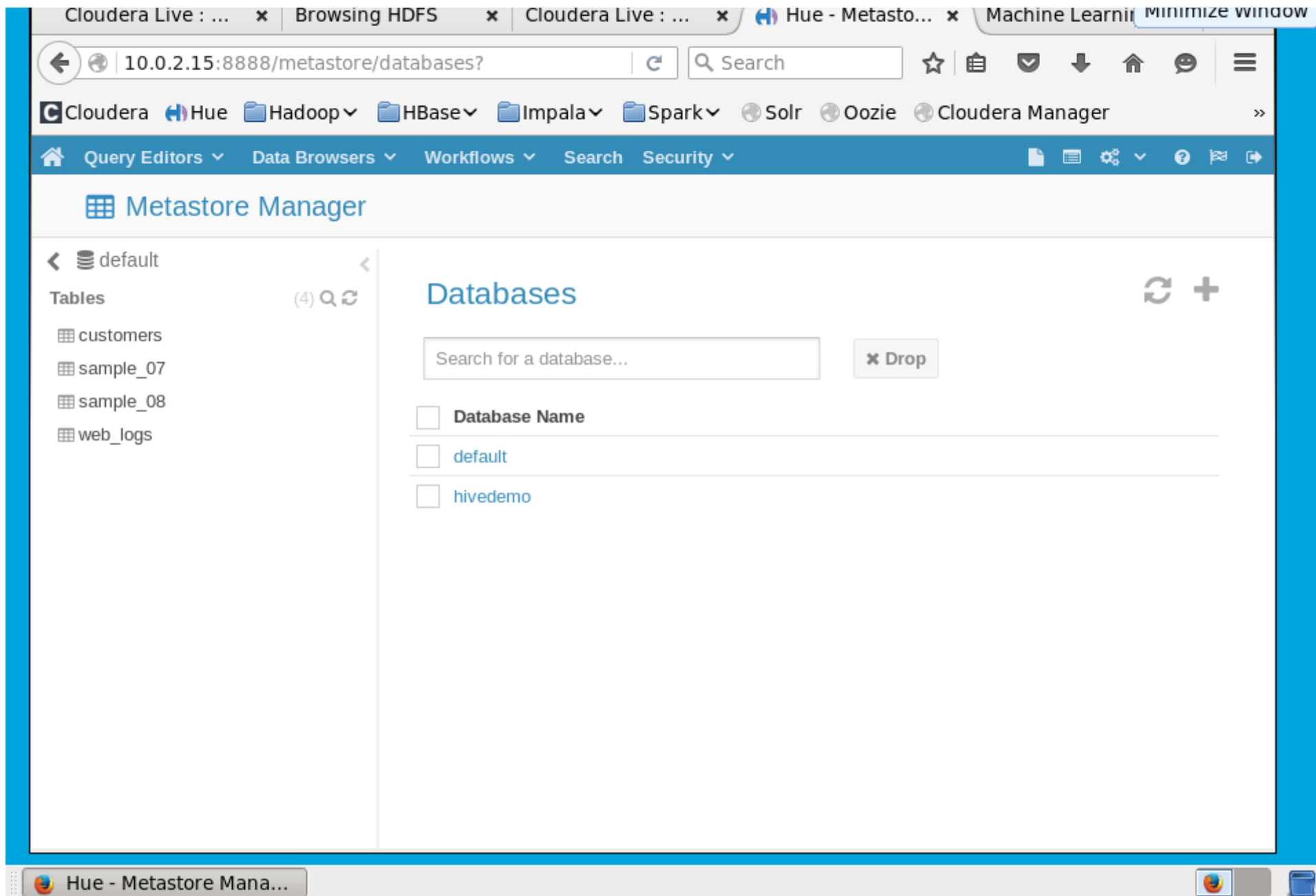
Cloudera Live : ... x Browsing HDFS x Cloudera Live : ... x Hue - Metastore ... x Machine Learnin... x

10.0.2.15:8888/hue/way/create/database#step/2



'DB'가 확인.





## (다) table 만들기

Hue - Metastore Manager - Metastore - Mozilla Firefox

Cloudera Live : ... x Browsing HDFS x Cloudera Live : ... x Hue - Metasto... x Machine Learnin... x

10.0.2.15:8888/metastore/tables/hivedemo Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager

Query Editors Data Browsers Workflows Search Security

### Metastore Manager

< default

Tables (4) Q ↺

- customers
- sample\_07
- sample\_08
- web\_logs

## Databases > hivedemo

STATS

No comment. cloudera (USER) Location

### TABLES

No tables found.

테이블 명을 입력한 후, 'iris\_table'이라고 입력하였다. 이후 'Next' 버튼을 선택한다.

The screenshot shows the Hue Metastore Manager interface in a Mozilla Firefox browser window. The browser's address bar shows the URL `10.0.2.15:8888/beeswax/create/create_table/hivedemo`. The Hue interface has a top navigation bar with links to Cloudera, Hue, Hadoop, HBase, Impala, Spark, Solr, Oozie, Cloudera Manager, and Getting Started. Below this is a secondary navigation bar with links to Query Editors, Data Browsers, Workflows, Search, and Security. The main content area is titled 'Metastore Manager' and shows a breadcrumb trail: 'Databases > hivedemo > Create a new table manually'. The wizard consists of five steps: Step 1: Name, Step 2: Record Format, Step 3: Serialization, Step 4: File Format, and Step 5: Location. Step 1 is currently active. The 'Table Name' field is filled with 'iris\_table'. Below it, a description field is filled with 'Optional'. The interface also shows a sidebar on the left with a list of tables: customers, sample\_07, sample\_08, and web\_logs.

Applications Places System

Wed Feb 20, 2:33 AM cloudera

Hue - Metastore Manager - Create table manually - Mozilla Firefox

Cloudera Live : Welcom... x Cloudera Live : Welcom... x Hue - Metastore Ma... x

10.0.2.15:8888/beeswax/create/create\_table/hivedemo Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager Getting Started

HUE Query Editors Data Browsers Workflows Search Security

Metastore Manager

< default

Tables (4) Q

customers

sample\_07

sample\_08

web\_logs

Databases > hivedemo > Create a new table manually

Step 1: Name Step 2: Record Format Step 3: Serialization Step 4: File Format Step 5: Location

Step 6: Columns

Create a table

Let's start with a name and description for where we'll store your data.

Table Name iris\_table

Name of the new table. Table names must be globally unique. Table names tend to correspond to the directory where the data will be stored.

Description Optional

Use a table comment to describe your table. For example, note the data's provenance and any caveats users need to know.

[Next](#)[10.0.2.15:8888/filebrowser/view=/user/hive/warehouse/hivedemo.db](http://10.0.2.15:8888/filebrowser/view=/user/hive/warehouse/hivedemo.db)

Hue - Metastore Mana...

'데이터 구분자'를 선택한다. 여기서는 'Delimited'로 선택함.

Applications Places System Wed Jun 6, 7:51 AM cloudera

### Hue - Metastore Manager - Create table manually - Mozilla Firefox

Cloudera Live : ... x Browsing HDFS x Cloudera Live : ... x Hue - Metasto... x Machine Learnin... x

10.0.2.15:8888/beeswax/create/create\_table/hive Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager

Query Editors Data Browsers Workflows Search Security

## Metastore Manager

default

Tables (4)

- customers
- sample\_07
- sample\_08
- web\_logs

### Choose Your Record Format

Individual records are broken up into columns either with delimiters (e.g., CSV or TSV) or using a specific serialization/deserialization (SerDe) implementation. (One common specialized SerDe is for parsing out columns with a regular expression.)

Record format ☒ Delimited

(Data files use delimiters, like commas (CSV) or tabs.)

☐ SerDe



(Enter a specialized serialization implementation.)

Back

Next

Hue - Metastore Mana...

아래에서 Field terminator은 Comma로 선택하였다.

Applications Places System Wed Jun 6, 7:52 AM cloudera

Hue - Metastore Manager - Create table manually - Mozilla Firefox

Cloudera Live : ... x Browsing HDFS x Cloudera Live : ... x Hue - Metasto... x Machine Learnin... x

10.0.2.15:8888/beeswax/create/create\_table/hive Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager

Query Editors Data Browsers Workflows Search Security

Metastore Manager

default

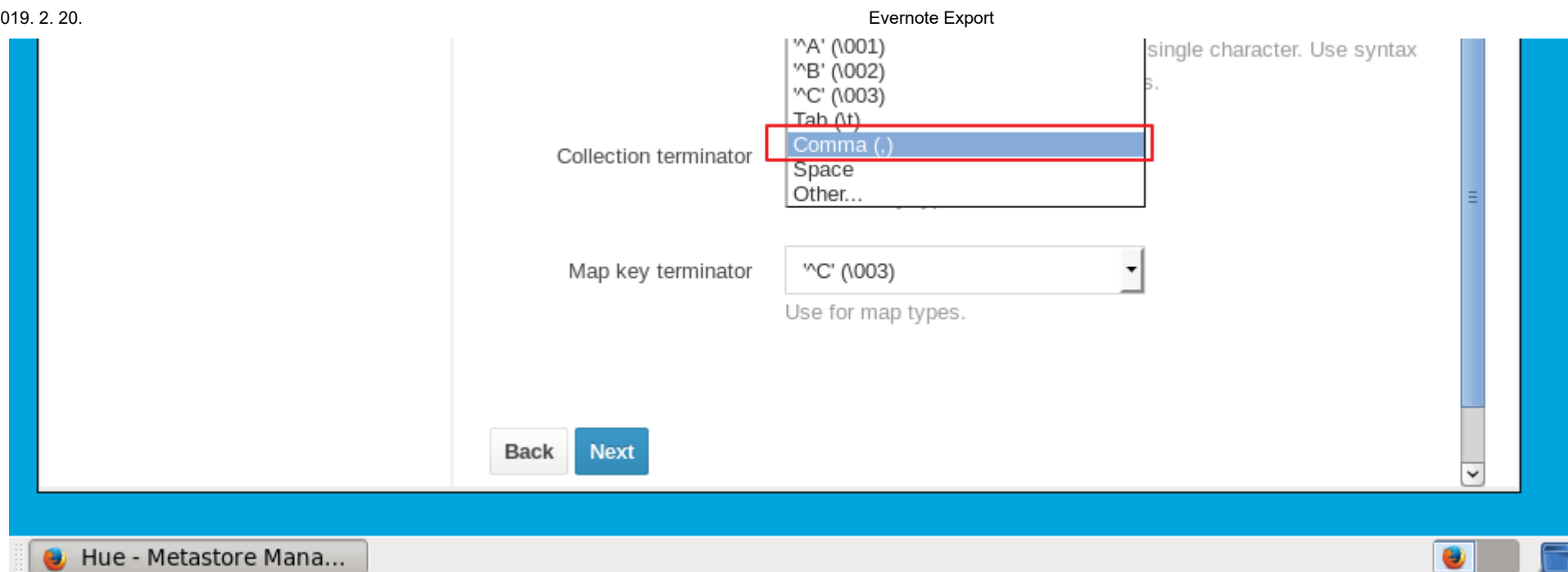
Tables (4)

- customers
- sample\_07
- sample\_08
- web\_logs

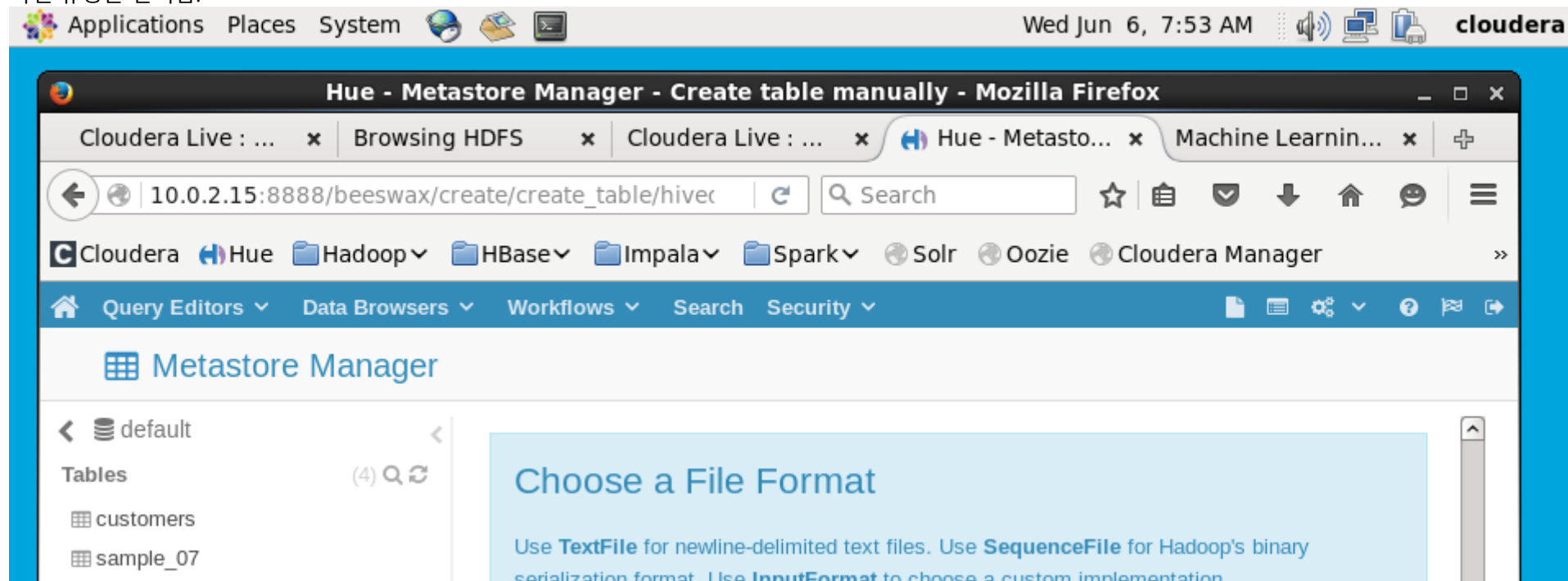
Configure Record Serialization

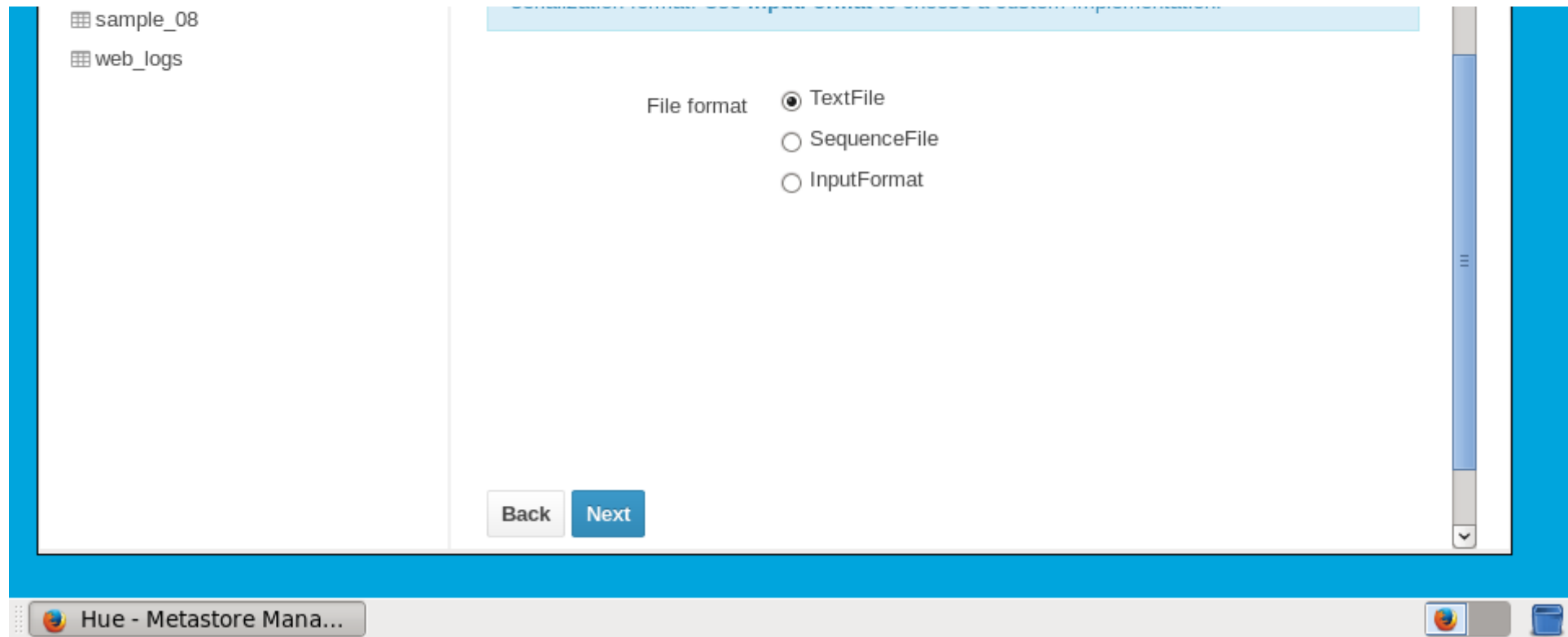
Only supports single-character delimiters.

Field terminator ^A' (001)



파일 유형을 선택함.





The image shows a web-based interface for exporting Evernote data. On the left, a sidebar lists two datasets: 'sample\_08' and 'web\_logs'. The main area is titled 'Evernote Export' and contains a 'File format' section with three radio button options: 'TextFile' (selected), 'SequenceFile', and 'InputFormat'. At the bottom of the main area are 'Back' and 'Next' buttons. The interface is part of a web browser window titled 'Hue - Metastore Mana...' with standard OS taskbar icons at the bottom.

sample\_08  
web\_logs

File format

☒ TextFile  
☐ SequenceFile  
☐ InputFormat

Back Next

Hue - Metastore Mana...

Hue - Metastore Manager - Create table manually - Mozilla Firefox

Cloudera Live : ... x Browsing HDFS x Cloudera Live : ... x Hue - Metasto... x Machine Learnin... x

10.0.2.15:8888/beeswax/create/create\_table/hive Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager

Query Editors Data Browsers Workflows Search Security

## Metastore Manager

< default

Tables (4) 🔍 ↺

- customers
- sample\_07
- sample\_08
- web\_logs

### Choose Where Your Table's Data is Stored

Location ☒ Use default location

Store your table in the default location (controlled by Hive, and typically /user/hive/warehouse/table\_name).

Back Next

Sepal\_length 를 컬럼명으로 하고, Column type를 float로 한다.

Hue - Metastore Manager - Create table manually - Mozilla Firefox

Cloudera Live : ... x Browsing HDFS x Cloudera Live : ... x Hue - Metasto... x Machine Learnin... x

10.0.2.15:8888/beeswax/create/create\_table/hive Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager

Query Editors Data Browsers Workflows Search Security

### Metastore Manager

default

Tables (4)

- customers
- sample\_07
- sample\_08
- web\_logs

## Configure Table Columns

Column name

Column name must be single words that start with a letter or a digit.

Column type

Type for this column. Certain advanced types (namely, structs) are not exposed in this interface.

Add a column

나머지 컬럼을 순서대로 추가 후, **Create table** 버튼 선택, 대소문자를 구분하지 않는다.

Sepal\_Width(float) , Petal\_Length(float), Petal\_Width(float), Species(string)

The screenshot shows the Hue Metastore Manager interface in a Mozilla Firefox browser. The browser's address bar displays the URL `10.0.2.15:8888/beeswax/create/create_table/hive`. The page title is "Hue - Metastore Manager - Create table manually - Mozilla Firefox". The interface includes a top navigation bar with links to Cloudera, Hue, Hadoop, HBase, Impala, Spark, Solr, Oozie, and Cloudera Manager. Below this is a secondary navigation bar with links to Query Editors, Data Browsers, Workflows, Search, and Security. The main content area is titled "Metastore Manager" and features a left sidebar with a "Tables" list containing "customers", "sample\_07", "sample\_08", and "web\_logs". The central panel is titled "Configure Partitions" and contains a text box explaining that partitions are a way to tell the query server that data for a specific partition value are stored together. It provides an example of a partition path: `/user/hive/warehouse/logs/dt=20100101/`. Below the text box are two buttons: "Add a partition" and "Create table".

Hue - Metastore Manager - Create table manually - Mozilla Firefox

Cloudera Live : ... x Browsing HDFS x Cloudera Live : ... x Hue - Metasto... x Machine Learnin... x

10.0.2.15:8888/beeswax/create/create\_table/hive Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager

Query Editors Data Browsers Workflows Search Security

Metastore Manager

default

Tables (4)

- customers
- sample\_07
- sample\_08
- web\_logs

### Configure Partitions

If your data is naturally partitioned (by date, for example), partitions are a way to tell the query server that data for a specific partition value are stored together. The query server establishes a mapping between directories on disk (e.g., `/user/hive/warehouse/logs/dt=20100101/`) and the data for that day. Partitions are virtual columns; they are not represented in the data itself, but are determined by the data location. The query server implements query optimizations such that queries that are specific to a single partition need not read the data in other partitions.

Add a partition

Back Create table

Hue - Metastore Manager - Metastore - Mozilla Firefox

Cloudera Live : ... x Browsing HDFS x Cloudera Live : ... x Hue - Metasto... x Machine Learnin... x

10.0.2.15:8888/metastore/table/hivedemo/iris\_tab Search

Cloudera Hue Hadoop HBase Impala Spark Solr Oozie Cloudera Manager

Query Editors Data Browsers Workflows Search Security

## Metastore Manager

< default <

Tables (4) Q ↺

- customers
- sample\_07
- sample\_08
- web\_logs

Databases > hivedemo >

iris\_table

[iris dataset](#)

Overview Columns (5) Sample Details

PROPERTIES STATS ↺

Table cloudera Wed Jun 06 07:56:53 PDT 2018 text Not compressed

Location

COLUMNS (5)

	Name	Type	Comment
1	 <a href="#">sepal_length</a>	float	<a href="#">Add a comment...</a>
2	 <a href="#">sepal_width</a>	float	<a href="#">Add a comment...</a>
3	 <a href="#">petal_length</a>	float	<a href="#">Add a comment...</a>
4	 <a href="#">petal_width</a>	float	<a href="#">Add a comment...</a>
5	 <a href="#">species</a>	string	<a href="#">Add a comment...</a>

[View more...](#)

### SAMPLE

The table does not contain any data.

테이블을 만들고 해당된 테이블에 데이터를 올린다.



준비된 데이터를 올리기 위해 두번째 아이콘 'Import data'를 선택한다.  
'Upload a file'를 선택 후, iris.csv 데이터 셋을 선택한 후, Open를 선택하면  
'/user/cloudera'에 데이터 셋이 올라가게 된다.



hue Query Editors ▾ Data Browsers ▾ Workflows ▾ Search Security ▾

## Metastore Manager

< default

Tables

- customers
- sample\_07
- sample\_08
- web\_logs

### Import data

Path

Home / user / cloudera

- ..
- 2015\_11\_18
- 2015\_11\_19
- 2015\_11\_20
- 2015\_11\_21

Upload a file

Select this folder

☐ Overwrite existing data

Note that loading data will n location.

### File Upload

cloudera Documents dataset

Places

- Search
- Recently Used
- cloudera
- Desktop
- File System
- VBox\_GAs\_5....
- Documents
- Music
- Pictures
- Videos
- Downloads

Name	Size	Modified
iris.csv	4.4 KB	02:44

All Files ▾

Cancel Open

## Import data

Path /user/cloudera ..

Home / user / cloudera

- ..
- 2015\_11\_18
- 2015\_11\_19
- 2015\_11\_20
- 2015\_11\_21
- iris.csv

Upload a file

Select this folder

☐ Overwrite existing data

Note that loading data will move data from its location into location.

## Import data

Path /user/cloudera/iris.csv ..

☐ Overwrite existing data

Note that loading data will move data from its location into the table's storage location.



Cancel

Submit

Cancel

Submit

iris.csv 를 선택 후, 'Submit' 버튼을 선택한다. 이후 iris 데이터 셋이 올라간 것을 확인할 수 있다.

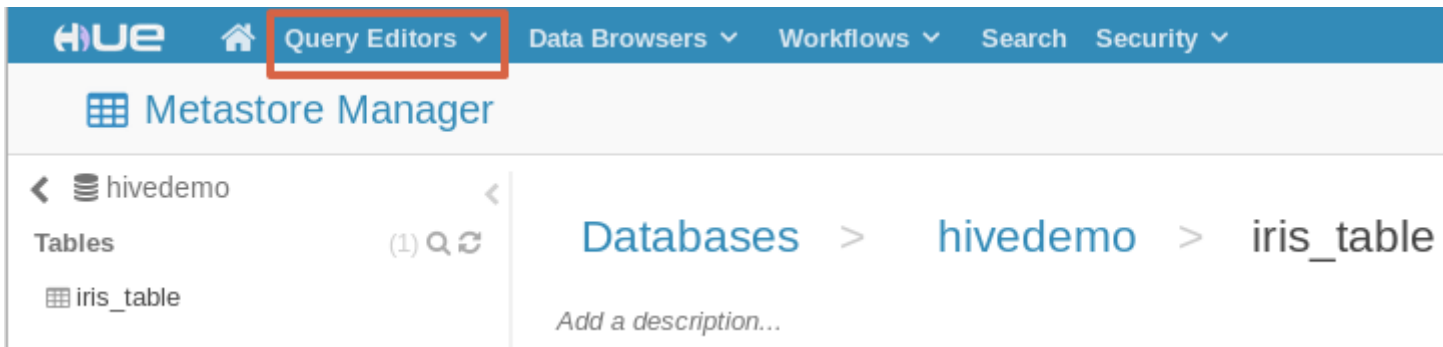
	Name	Type	Comment
1	 sepal_length	float	Add a comment...
2	 sepal_width	float	Add a comment...
3	 petal_length	float	Add a comment...
4	 petal_width	float	Add a comment...
5	 species	string	Add a comment...

[View more...](#)

#### SAMPLE

	iris_table.sepal_length	iris_table.sepal_width	iris_table.petal_length	iris_table.petal_width	iris_table.specie
1	5.099999904632568	3.5	1.399999976158142	0.20000000298023224	Iris-setosa
2	4.9000000095367432	3	1.399999976158142	0.20000000298023224	Iris-setosa
3	4.699999809265137	3.200000047683716	1.2999999523162842	0.20000000298023224	Iris-setosa

### 1-3 데이터에 대한 Query를 수행하기



The screenshot shows the Hue web interface. The 'Query Editors' menu item is highlighted with a red box. Below it, the 'Metastore Manager' section shows a breadcrumb path: 'Databases > hivedemo > iris\_table'. The 'Tables' list on the left includes 'iris\_table'.

'Query Editors'를 선택 후, Hive를 선택한다.

'select'문을 입력한 후, 확인한다.

**(실습)**

(1) species가 'setosa'인 것을 검색해 보자.

**(도전)**

(2) sepal\_width가 3부터 5의 값을 가지는 것은 몇개나 있을까?