Hadoop_Hive

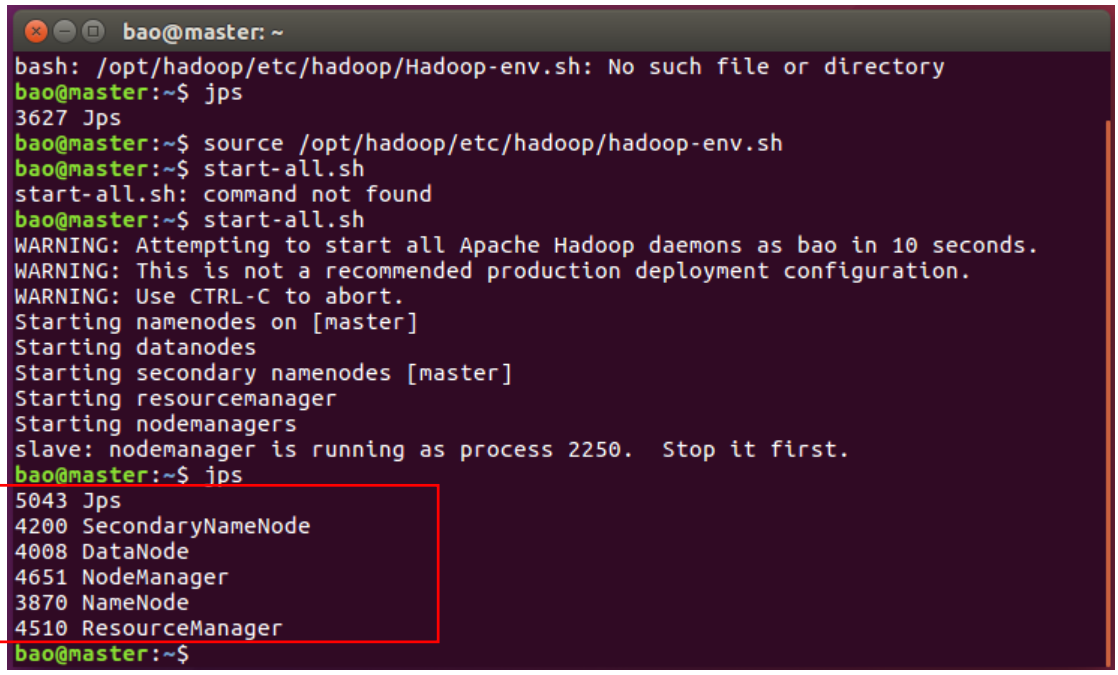
1. 開啟 Terminal，安裝 Hive 前，先啟動 hadoop。

   source /opt/hadoop/etc/hadoop/hadoop-env.sh (新開 terminal 欲使用 hadoop 都須下此指令)

   start-all.sh (啟動輸入一次即可)

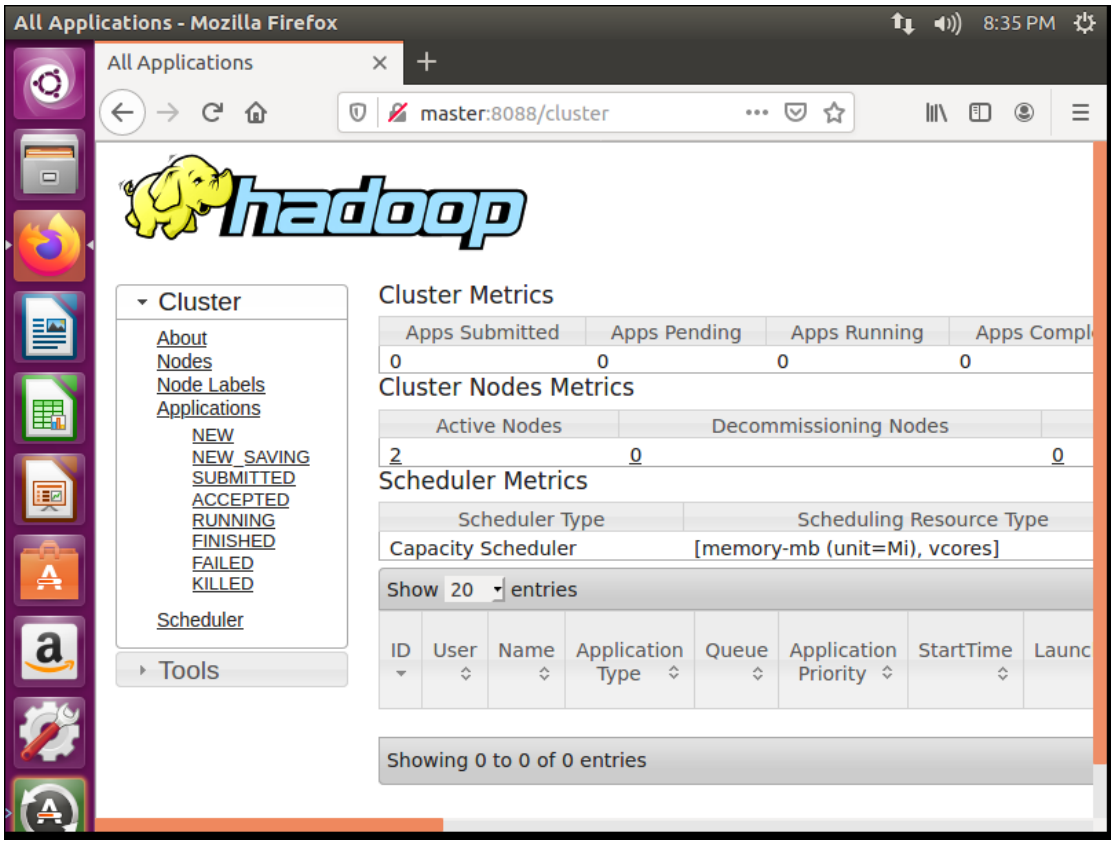
2. 查看是否正確啟動

   jps

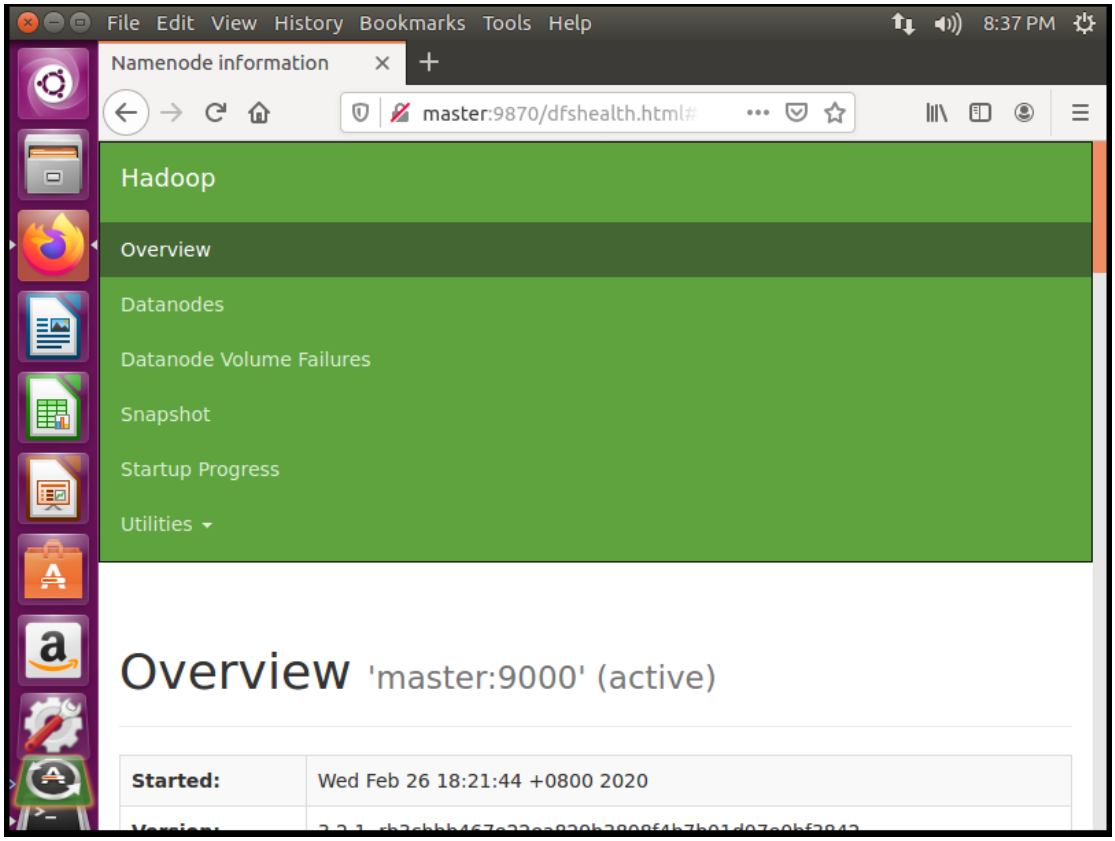


3. 開啟網頁確認有無正常運作

   http://master:8088



http://master:9870



4. 安裝 Hive。

   wget https://archive.apache.org/dist/hive/hive-3.1.2/apache-hive-3.1.2-bin.tar.gz

```
bao@master: ~
bao@master:~$ jps
5043 Jps
4200 SecondaryNameNode
4008 DataNode
4651 NodeManager
3870 NameNode
4510 ResourceManager
bao@master:~$ wget https://archive.apache.org/dist/hive/hive-3.1.2/apache-hive-3
.1.2-bin.tar.gz
--2020-02-26 20:39:31--  https://archive.apache.org/dist/hive/hive-3.1.2/apache-
hive-3.1.2-bin.tar.gz
Resolving archive.apache.org (archive.apache.org)... 163.172.17.199
Connecting to archive.apache.org (archive.apache.org)|163.172.17.199|:443... con
nected.
HTTP request sent, awaiting response... 200 OK
Length: 278813748 (266M) [application/x-gzip]
Saving to: 'apache-hive-3.1.2-bin.tar.gz'

apache-hive-3.1.2-b 100%[===================>] 265.90M  3.27MB/s    in 68s

2020-02-26 20:40:41 (3.92 MB/s) - 'apache-hive-3.1.2-bin.tar.gz' saved [27881374
8/278813748]

bao@master:~$
```

5. 解壓縮至 /opt 底下

   tar zxvf apache-hive-3.1.2-bin.tar.gz

   sudo mv apache-hive-3.1.2-bin /opt/hive

```
bao@master: ~
apache-hive-3.1.2-bin/hcatalog/share/hcatalog/hive-hcatalog-core-3.1.2.jar
apache-hive-3.1.2-bin/hcatalog/share/hcatalog/hive-hcatalog-pig-adapter-3.1.2.ja
r
apache-hive-3.1.2-bin/hcatalog/share/hcatalog/hive-hcatalog-server-extensions-3.
1.2.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/jersey-json-1.19.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/jaxb-impl-2.2.3-1.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/jackson-jaxrs-1.9.2.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/jackson-xc-1.9.2.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/jersey-core-1.19.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/jsr311-api-1.1.1.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/jersey-servlet-1.19.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/hive-webhcat-3.1.2.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/wadl-resourcedoc-doclet-1.4
.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/xercesImpl-2.9.1.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/xml-apis-1.3.04.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/commons-exec-1.1.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/svr/lib/jul-to-slf4j-1.7.10.jar
apache-hive-3.1.2-bin/hcatalog/share/webhcat/java-client/hive-webhcat-java-clien
t-3.1.2.jar
bao@master:~$ sudo mv apache-hive-3.1.2-bin /opt/hive
[sudo] password for bao:
bao@master:~$
```

6. 設定環境變數

   sudo gedit /etc/profile

   並將以下程式碼寫入檔案最後面，寫完右上角 save。

   export HIVE_HOME="/opt/hive"

   export HIVE_CONF_DIR="/opt/hive/conf"

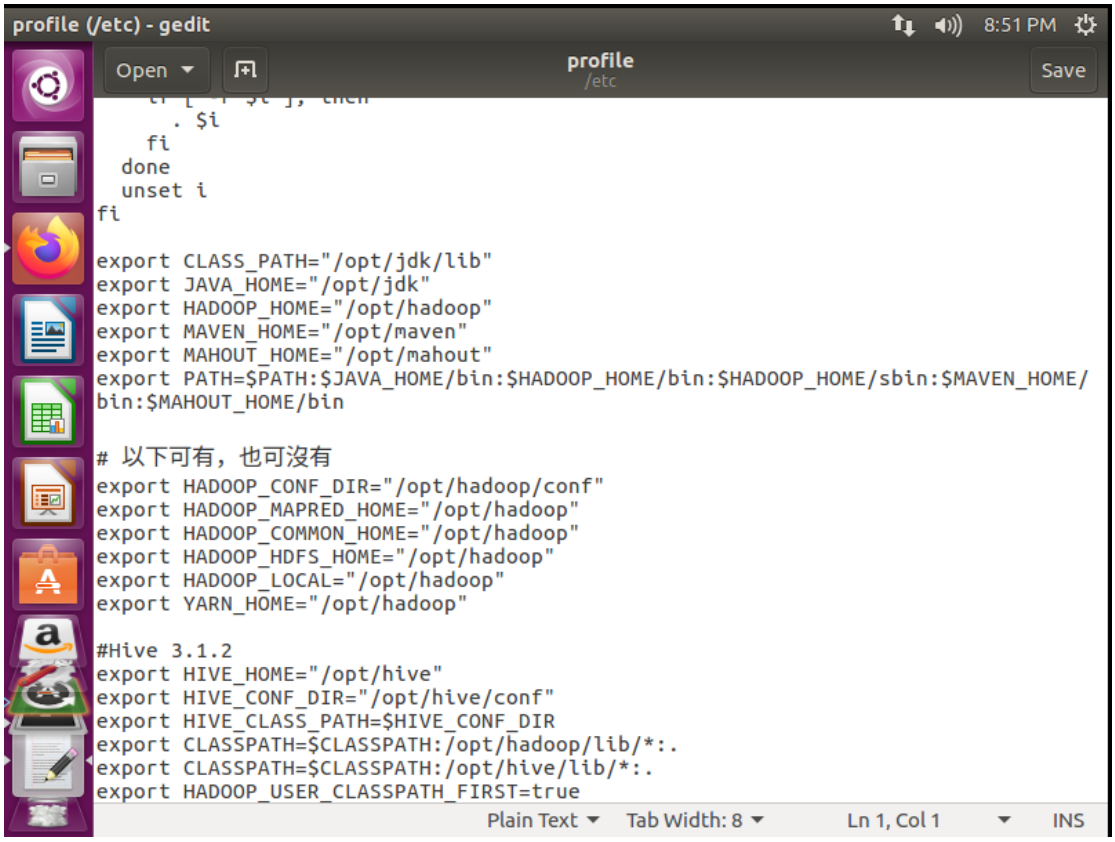
   export HIVE_CLASS_PATH=$HIVE_CONF_DIR

   export CLASSPATH=$CLASSPATH:/opt/hadoop/lib/*:.

   export CLASSPATH=$CLASSPATH:/opt/hive/lib/*:.

   export HADOOP_USER_CLASSPATH_FIRST=true

   export PATH=$PATH:$HIVE_HOME /bin



7. 執行環境變數設定

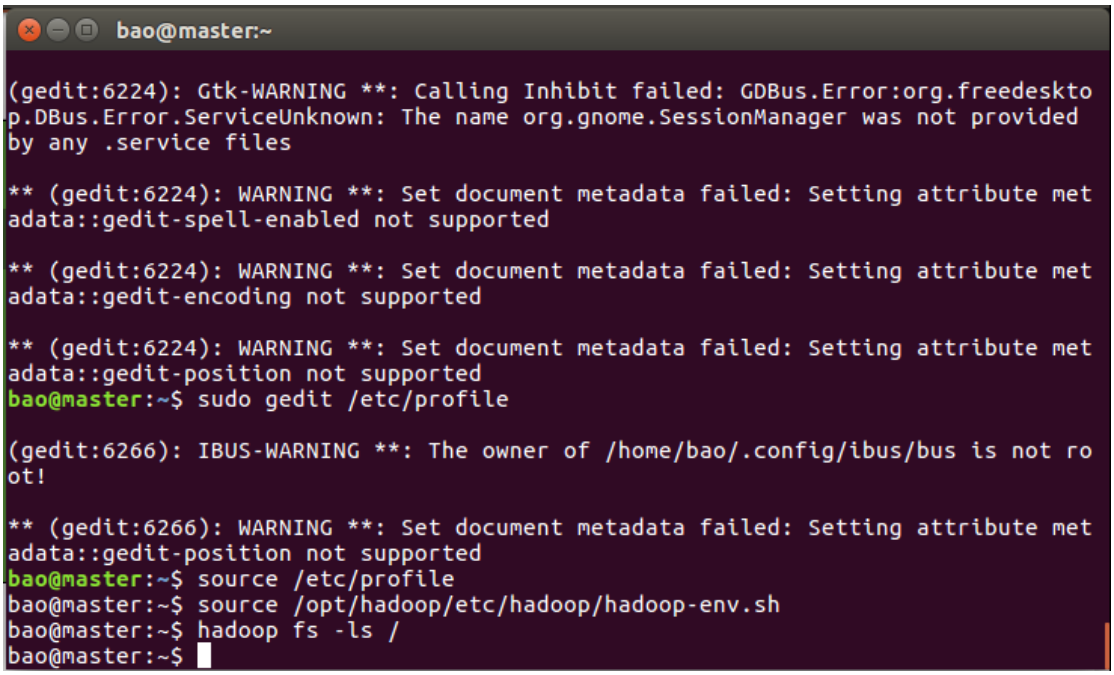
   source /etc/profile

   source /opt/hadoop/etc/hadoop/hadoop-env.sh

8. 使用 Hadoop HDFS 命令來創建/ tmp 和/ user/學號/ hive / warehouse。

   先利用 ls 查看 hdfs 有哪些資料夾

   hadoop fs -ls /



利用 mkdir 指令創建

hdfs dfs -mkdir /tmp

hdfs dfs -mkdir /user

hdfs dfs -mkdir /user/****

hdfs dfs -mkdir /user/****/hive

hdfs dfs -mkdir /user/****/hive/warehouse

Note:****填入你的學號!!!!!!

在使用 ls 指令確認創建成功

hadoop fs -ls /

hadoop fs -ls /user

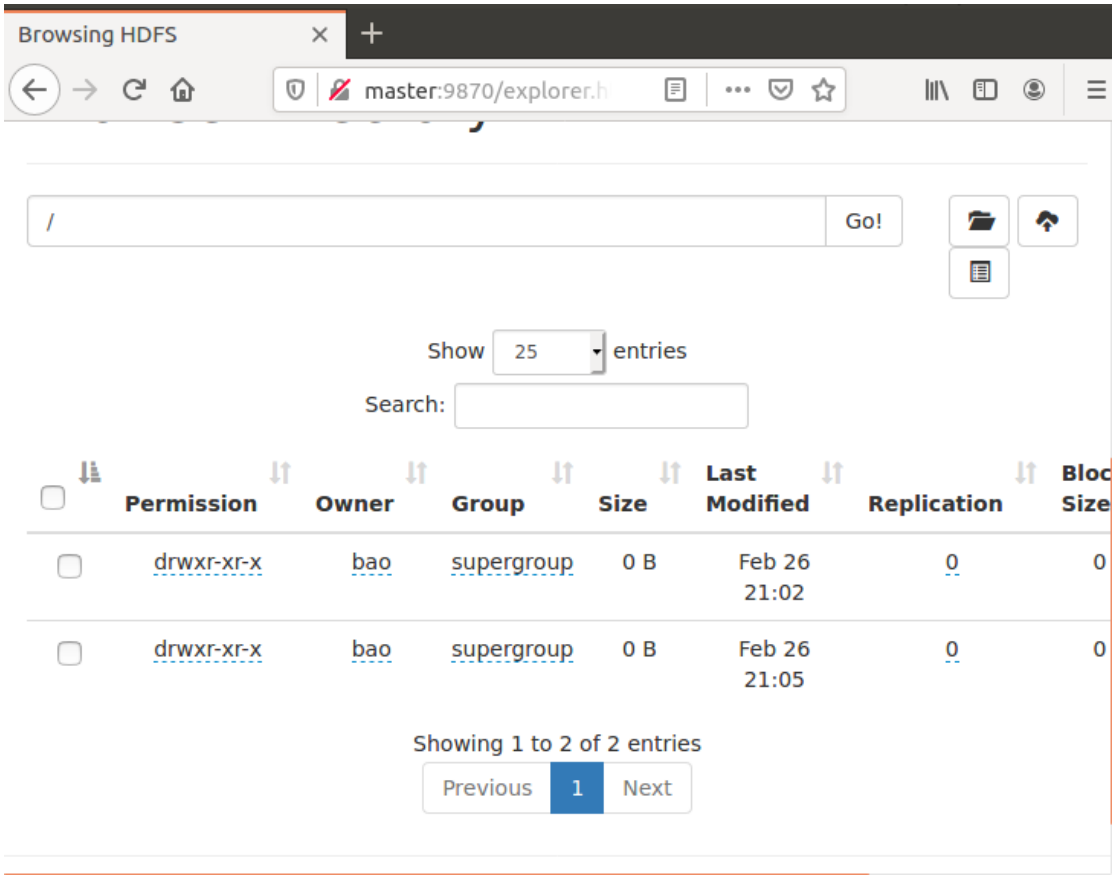
hadoop fs -ls /user/****

hadoop fs -ls /user/****/hive

Note:****填入你的學號!!!!!!

```
bao@master:~
adata::gedit-position not supported
bao@master:~$ source /etc/profile
bao@master:~$ source /opt/hadoop/etc/hadoop/hadoop-env.sh
bao@master:~$ hadoop fs -ls /
bao@master:~$ hdfs dfs -mkdir /tmp
bao@master:~$ hdfs dfs -mkdir /user
bao@master:~$ hdfs dfs -mkdir /user/bao
bao@master:~$ hdfs dfs -mkdir /user/bao/hive
bao@master:~$ hdfs dfs -mkdir /user/bao/hive/warehouse
bao@master:~$ hadoop fs -ls /
Found 2 items
drwxr-xr-x   - bao supergroup          0 2020-02-26 21:02 /tmp
drwxr-xr-x   - bao supergroup          0 2020-02-26 21:05 /user
bao@master:~$ hadoop fs -ls /user
Found 1 items
drwxr-xr-x   - bao supergroup          0 2020-02-26 21:05 /user/bao
bao@master:~$ hadoop fs -ls /user/bao
Found 1 items
drwxr-xr-x   - bao supergroup          0 2020-02-26 21:06 /user/bao/hive
bao@master:~$ hadoop fs -ls /user/bao/hive
Found 1 items
drwxr-xr-x   - bao supergroup          0 2020-02-26 21:06 /user/bao/hive/warehou
se
bao@master:~$
```

也可利用利用 http://master:9870 ,點選 Utilities - Browse the filesystem
查看剛剛創建的資料夾



9. 變更檔案目錄權限

hdfs dfs -chmod g+w /tmp

hdfs dfs -chmod g+w /user/****/hive/warehouse

Note:****填入你的學號!!!!!!

利用 ls 查看變更後 hdfs 資料夾權限

hdfs dfs -ls /

```
bao@master:~$ hdfs dfs -ls /
Found 2 items
drwxrwxr-x   - bao supergroup          0 2020-02-26 21:02 /tmp
drwxr-xr-x   - bao supergroup          0 2020-02-26 21:05 /user
bao@master:~$
```

10. 編輯 hive-env.sh

移至/opt/hive/conf 目錄下，複製該目錄下 hive-env.sh.template 檔案並重新命名為 hive-env.sh

cd ~

cd /opt/hive/conf

sudo cp hive-env.sh.template hive-env.sh

sudo gedit hive-env.sh

編輯檔案並在最下方增加此行並儲存：

export HADOOP_HOME="/opt/hadoop"

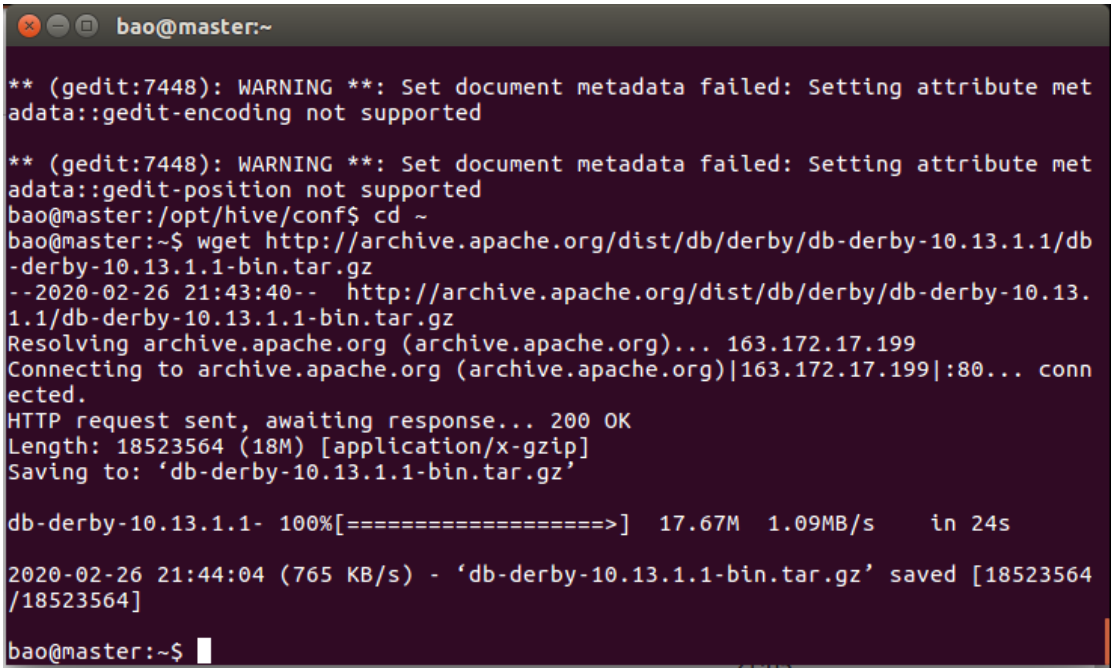
Open ▾ hive-env.sh /opt/hive/conf Save

```
#     export HADOOP_OPTS="$HADOOP_OPTS -XX:NewRatio=12 -Xms10m -
XX:MaxHeapFreeRatio=40 -XX:MinHeapFreeRatio=15 -XX:+UseParNewGC -XX:-
UseGCOverheadLimit"
#   else
#     export HADOOP_OPTS="$HADOOP_OPTS -XX:NewRatio=12 -Xms10m -
XX:MaxHeapFreeRatio=40 -XX:MinHeapFreeRatio=15 -XX:-UseGCOverheadLimit"
#   fi
# fi

# The heap size of the jvm stared by hive shell script can be controlled via:
#
# export HADOOP_HEAPSIZE=1024
#
# Larger heap size may be required when running queries over large number of
files or partitions.
# By default hive shell scripts use a heap size of 256 (MB).  Larger heap size
would also be
# appropriate for hive server.


# Set HADOOP_HOME to point to a specific hadoop install directory
# HADOOP_HOME=${bin}/../../hadoop

# Hive Configuration Directory can be controlled by:
# export HIVE_CONF_DIR=

# Folder containing extra libraries required for hive compilation/execution can
be controlled by:
# export HIVE_AUX_JARS_PATH=
export HADOOP_HOME="/opt/hadoop"
```

11. 安裝 Apache Derby

cd ~

wget http://archive.apache.org/dist/db/derby/db-derby-10.13.1.1/db-derby-10.13.1.1-bin.tar.gz



解壓縮到/opt 下

sudo tar zxvf db-derby-10.13.1.1-bin.tar.gz

sudo mv db-derby-10.13.1.1-bin /opt/derby

配置環境變數

sudo gedit /etc/profile

將以下程式碼加在檔案最下面並且儲存

export DERBY_HOME="/opt/derby"

export PATH=$PATH:$DERBY_HOME/bin

export PATH=$PATH:$DERBY_HOME/bin

export CLASSPATH=$CLASSPATH:$DERBY_HOME/lib/derby.jar:$DERBY_HOME/lib/derbytools.jar

執行環境變數設定

source /etc/profile

source /opt/hadoop/etc/hadoop/hadoop-env.sh

在/opt/derby 目錄下建立一個 data 目錄用來儲存 Metastore 數據

cd ~

cd /opt/derby

sudo mkdir data

12. 配置 Hive Metastore

移至 /opt/hive/conf 目錄下，複製該目錄下 hive-default.xml.template 檔案並重新命名為 hive-site.xml

cd ~

cd /opt/hive/conf

sudo cp hive-default.xml.template hive-site.xml

編輯 hive-site.xml 文件

sudo gedit hive-site.xml

將<configuration> and </configuration>之間的內容清除，增加下列內容即可

```
<property>
<name>javax.jdo.option.ConnectionURL</name>
<value>jdbc:derby:;databaseName=metastore_db;create=true</value>
<description>
```

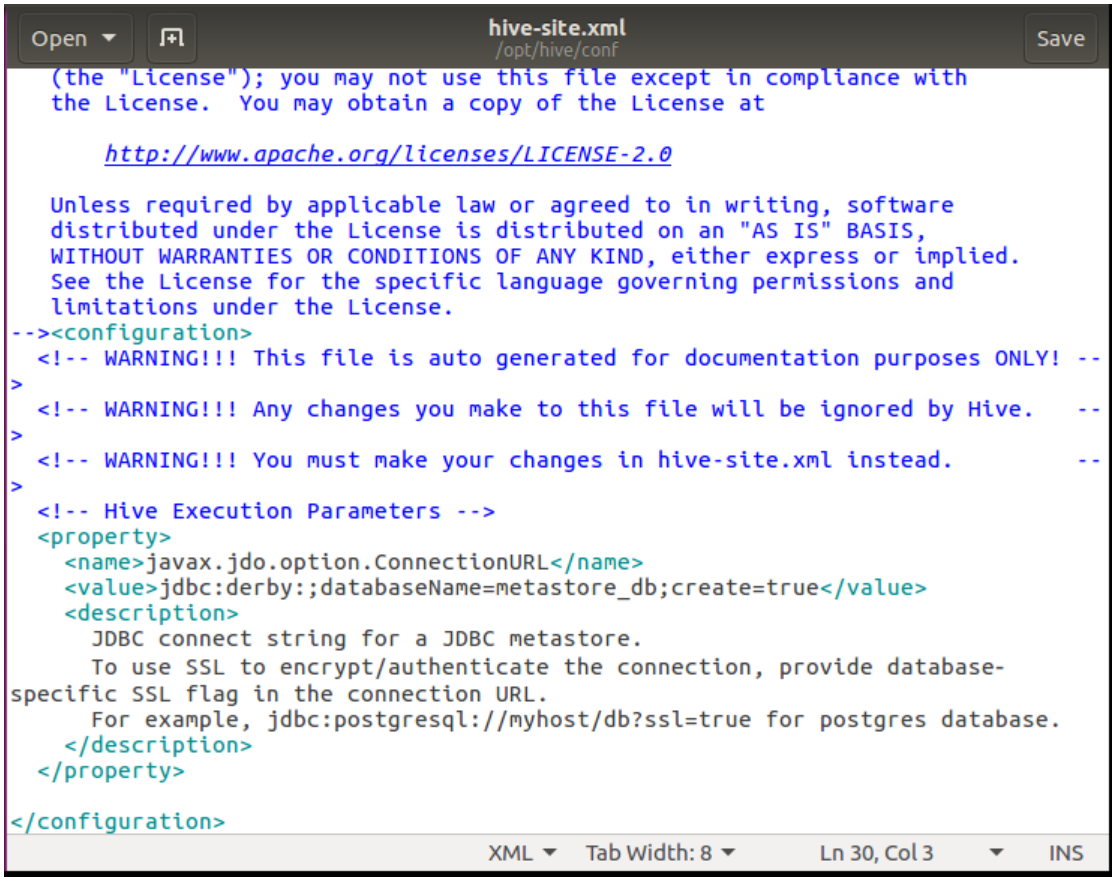
JDBC connect string for a JDBC metastore.

To use SSL to encrypt/authenticate the connection, provide database-specific SSL flag in the connection URL.

For example, jdbc:postgresql://myhost/db?ssl=true for postgres database.

</description>

</property>



在/opt/hive/conf 目錄下，建立一個名為 jpox.properties 的文件

cd ~

cd /opt/hive/conf

sudo gedit jpox.properties

在該文件增加下列內容，並存檔跳出

javax.jdo.PersistenceManagerFactoryClass =

org.jpox.PersistenceManagerFactoryImpl

org.jpox.autoCreateSchema = false

org.jpox.validateTables = false

org.jpox.validateColumns = false

org.jpox.validateConstraints = false

org.jpox.storeManagerType = rdbms

org.jpox.autoCreateSchema = true

org.jpox.autoStartMechanismMode = checked

org.jpox.transactionIsolation = read_committed

javax.jdo.option.DetachAllOnCommit = true

javax.jdo.option.NontransactionalRead = true

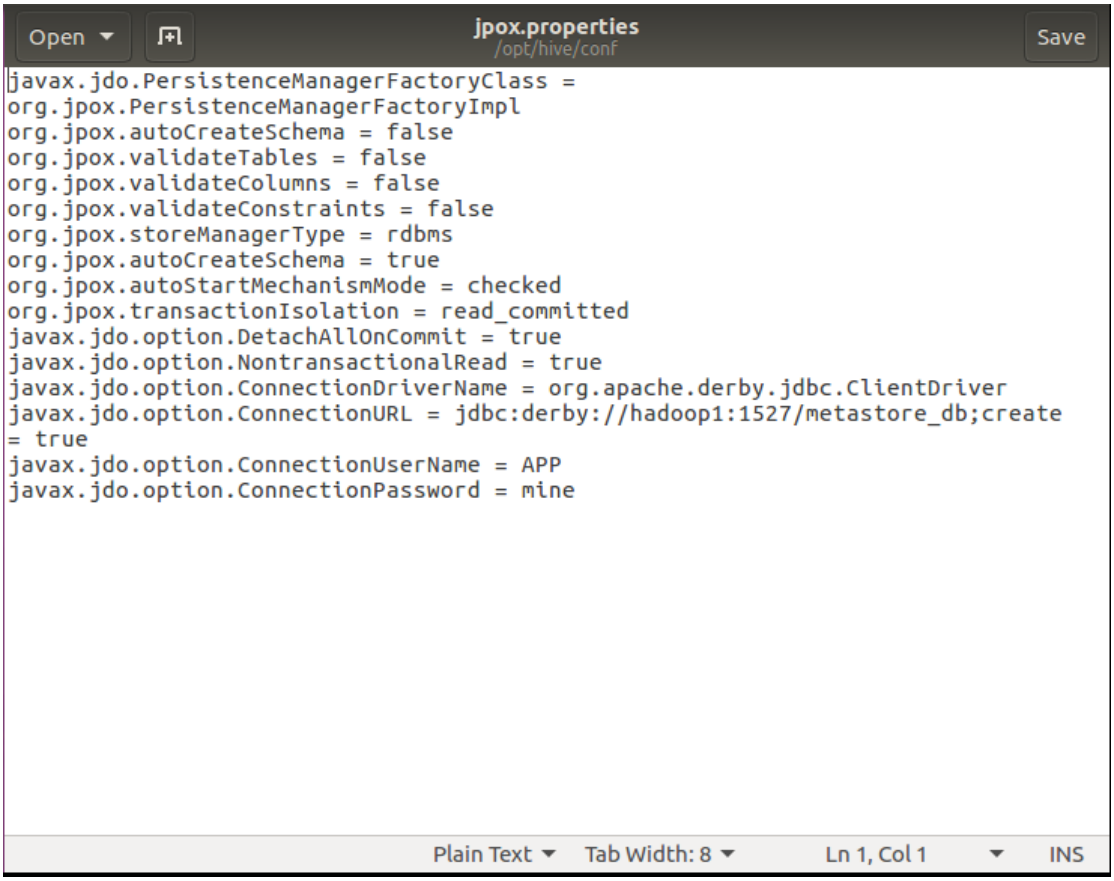
javax.jdo.option.ConnectionDriverName = org.apache.derby.jdbc.ClientDriver

javax.jdo.option.ConnectionURL = jdbc:derby://hadoop1:1527/metastore_db;create

= true

javax.jdo.option.ConnectionUserName = APP

javax.jdo.option.ConnectionPassword = mine



設置 Hive 資料夾的權限

cd ~

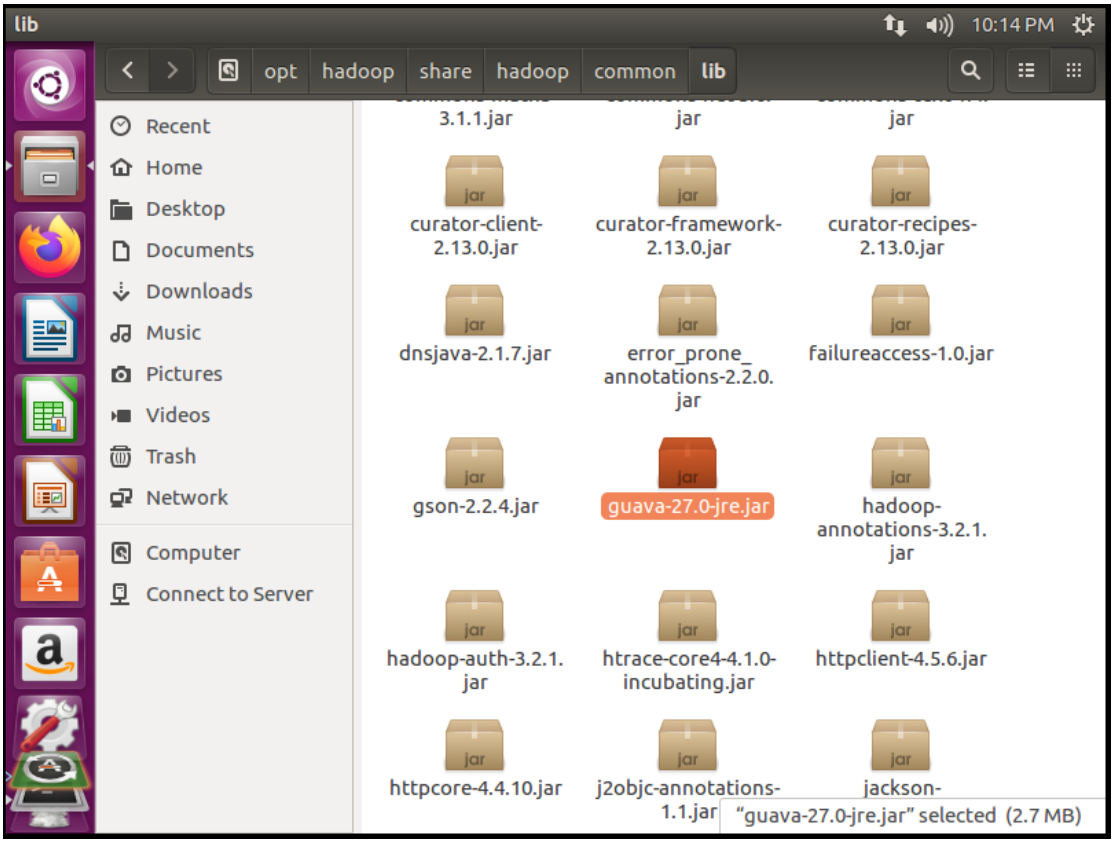
cd /opt

sudo chown -R **** hive

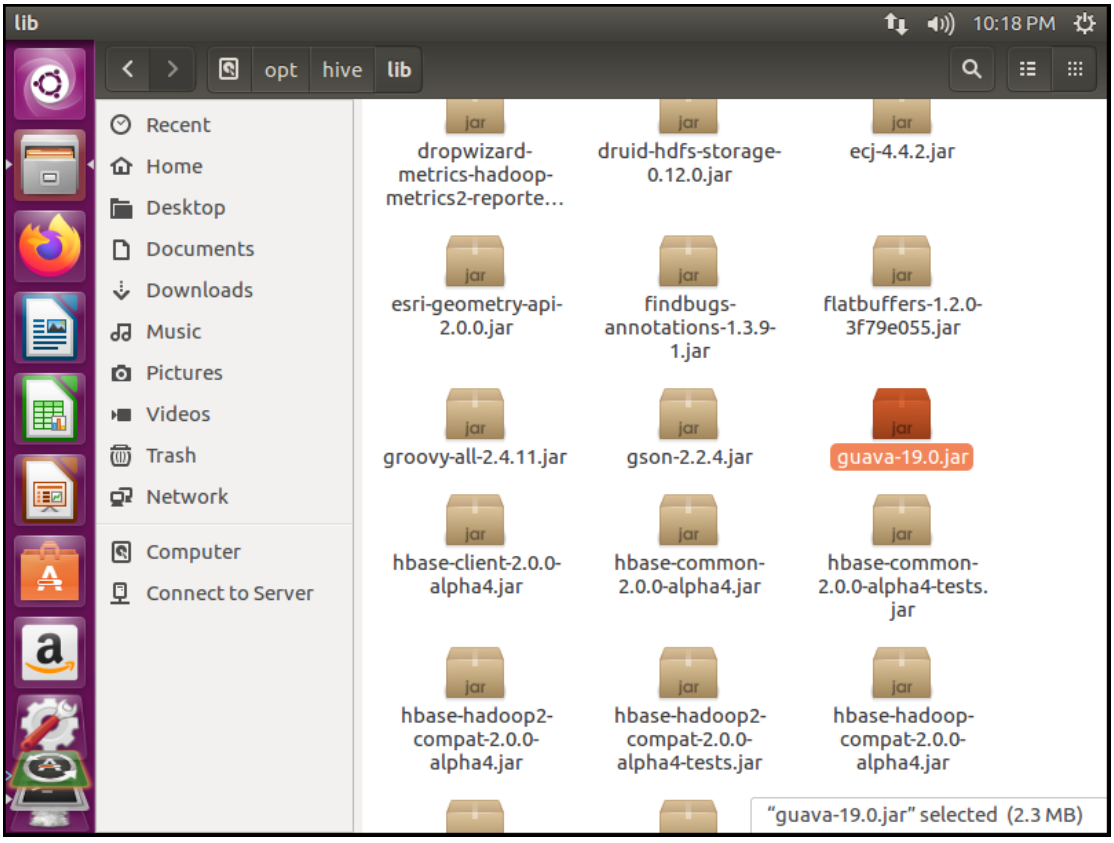
Note:****填入 ubuntu 使用者帳號

同步 Hadoop 和 hive 的 guava 版本(兩者取較高的版本)

下圖為 Hadoop 的 guava 所在位置



下圖為 Hive 的 guava 所在位置



刪除 Hive 的 guava-19.0.jar

複製 Hadoop 的 guava-27.0-jre.jar 貼至 Hive 的 lib 資料夾裡

Metastore schema initialization

回到 Terminal。從 Hive 2.1 開始，我們需要運行 schematool 命令作為初始化步驟，在這邊使用 derby as db type。

cd ~

cd /opt/hive/bin

./schematool -dbType derby -initSchema

```
bao@master:/opt/hive/bin$ ./schematool -dbType derby -initSchema
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/opt/hive/lib/log4j-slf4j-impl-2.10.0.jar!/org
/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/opt/hadoop/share/hadoop/common/lib/slf4j-log4
j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
Metastore connection URL:        jdbc:derby:;databaseName=metastore_db;create=tr
ue
Metastore Connection Driver :    org.apache.derby.jdbc.EmbeddedDriver
Metastore connection User:       APP
Starting metastore schema initialization to 3.1.0
Initialization script hive-schema-3.1.0.derby.sql
```

```
Initialization script completed
schemaTool completed
bao@master:/opt/hive/bin$
```

至 /opt/hive/bin/目錄下直接輸入 ./hive (就可以進入 Hive 的互動式查詢介面)。

./hive

顯示所有資料表:

show tables;

```
bao@master:/opt/hive/bin


Initialization script completed
schemaTool completed
bao@master:/opt/hive/bin$ ./hive
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/opt/hive/lib/log4j-slf4j-impl-2.10.0.jar!/org
/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/opt/hadoop/share/hadoop/common/lib/slf4j-log4
j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
Hive Session ID = 146e3758-dab2-4be5-bc04-a96603ac28ba

Logging initialized using configuration in jar:file:/opt/hive/lib/hive-common-3.
1.2.jar!/hive-log4j2.properties Async: true
Hive Session ID = 562cabbf-d193-4205-a7f3-80030bd088b7
Hive-on-MR is deprecated in Hive 2 and may not be available in the future versio
ns. Consider using a different execution engine (i.e. spark, tez) or using Hive
1.X releases.
hive> show tables;
OK
Time taken: 0.518 seconds
hive>
```

Hive 練習-建立資料表

建立一個 emp 資料表，透過 CREATE TABLE 語句創建一個名為 emp 資料表。emp

表中的字段和數據類型如下：

r.No	字段名稱	數據類型
1	Name	String
2	Esal	int

create table emp(ename string,esal int) row format delimited fields terminated by ',' stored as textfile;

```
hive> create table emp(ename string,esal int) row format delimited fields termin
ated by ',' stored as textfile;
OK
Time taken: 0.551 seconds
hive>
```

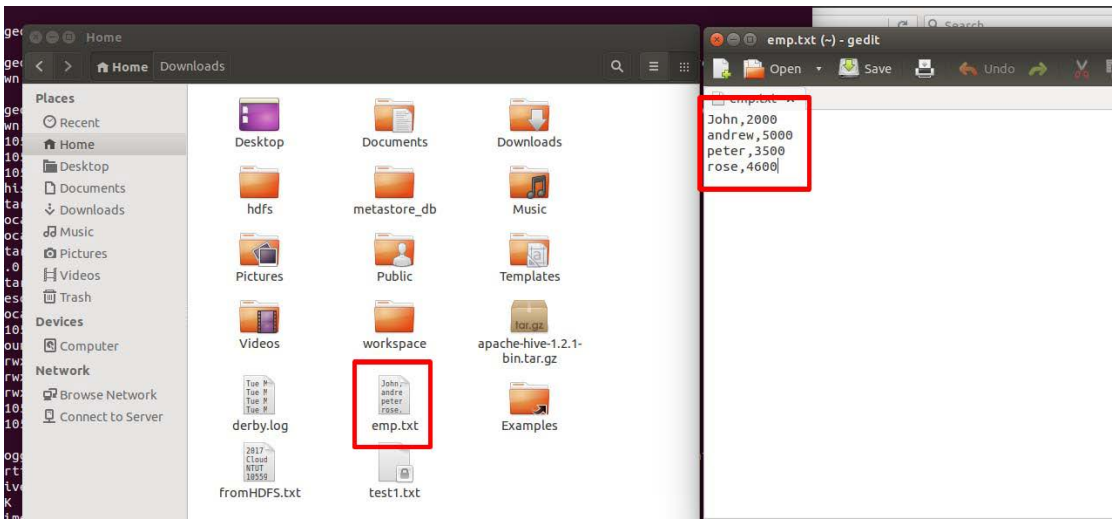
在本機端目錄 Home 下建立 emp.txt 檔，檔案內容資料如下：

John,2000

andrew,5000

peter,3500

rose,4600



將 emp.txt 檔案匯入資料到 Hive 資料表。

load data local inpath '/home/****/emp.txt' into table emp;

Note:****填入 Ubuntu 使用者帳戶

```
hive> load data local inpath '/home/bao/emp.txt' into table emp;
Loading data to table default.emp
OK
Time taken: 1.134 seconds
hive>
```

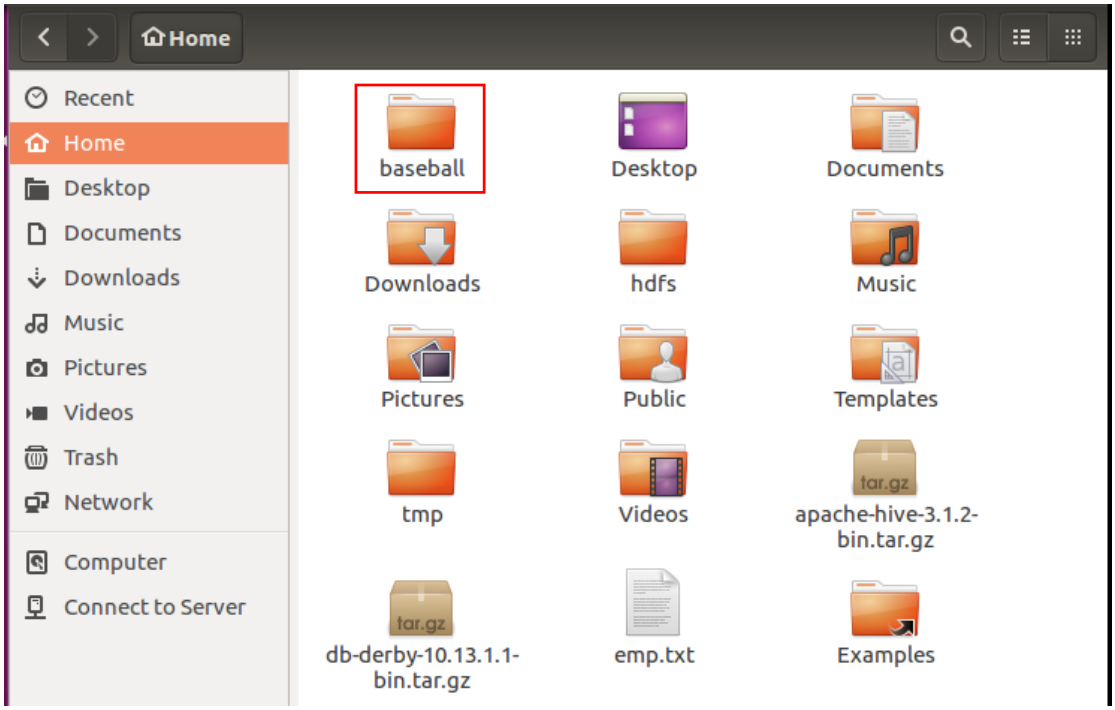
檔案匯入完畢後可透過 SELECT 來進行資料的檢索。

Select * from emp;

```
hive> Select * from emp;
OK
John    2000
andrew  5000
peter   3500
rose    4600
Time taken: 1.641 seconds, Fetched: 4 row(s)
hive>
```

Hive 練習-將 CSV 資料匯出到 Hive

於本機端建立一個資料夾 /baseball。



下載 2012 年的球賽統計資料，並解壓縮至 baseball 資料夾中。

```
cd ~
cd baseball
wget http://seanlahman.com/files/database/lahman2012-csv.zip
unzip lahman2012-csv.zip
```

```
bao@master: ~/baseball
  inflating: Appearances.csv
  inflating: AwardsManagers.csv
  inflating: AwardsPlayers.csv
  inflating: AwardsShareManagers.csv
  inflating: AwardsSharePlayers.csv
  inflating: Batting.csv
  inflating: BattingPost.csv
  inflating: Fielding.csv
  inflating: FieldingOF.csv
  inflating: FieldingPost.csv
  inflating: HallOfFame.csv
  inflating: Managers.csv
  inflating: ManagersHalf.csv
  inflating: Pitching.csv
  inflating: PitchingPost.csv
  inflating: readme 2012.txt
  inflating: Salaries.csv
  inflating: Schools.csv
  inflating: SchoolsPlayers.csv
  inflating: SeriesPost.csv
  inflating: Teams.csv
  inflating: TeamsFranchises.csv
  inflating: Master.csv
bao@master:~/baseball$
```

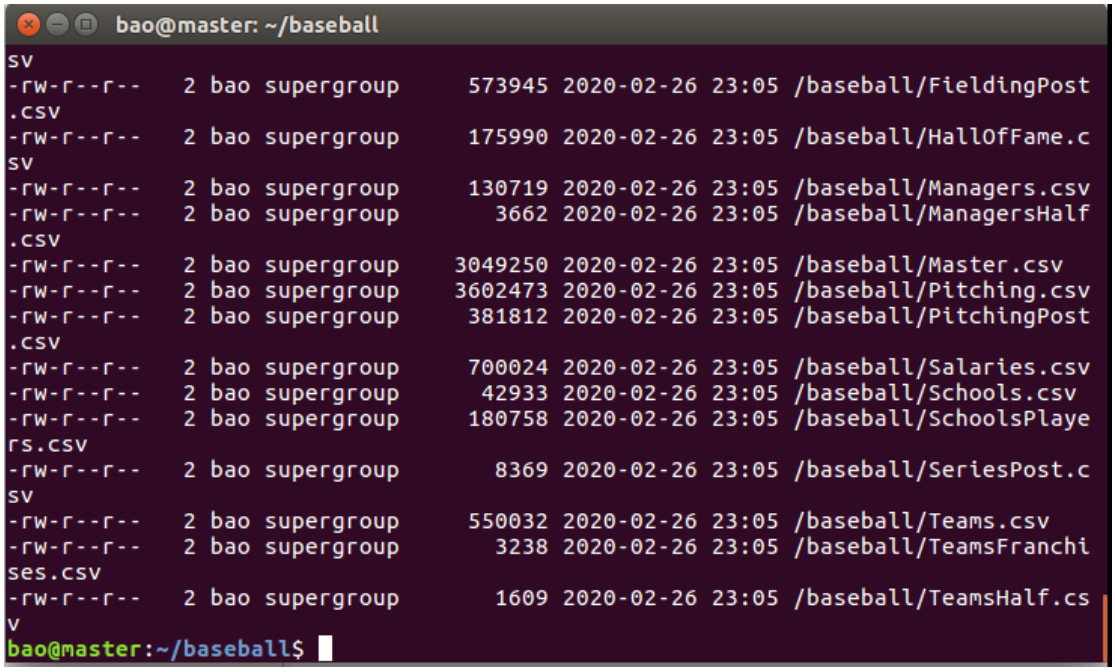
在 HDFS 上建立一個名為 baseball 的目錄，並將 /baseball 資料夾中所有 CSV 檔案上傳到該目錄中

(Hadoop 記得啟動 詳見第一頁)

hdfs dfs -mkdir /baseball

hdfs dfs -put *.csv /baseball

hdfs dfs -ls /baseball

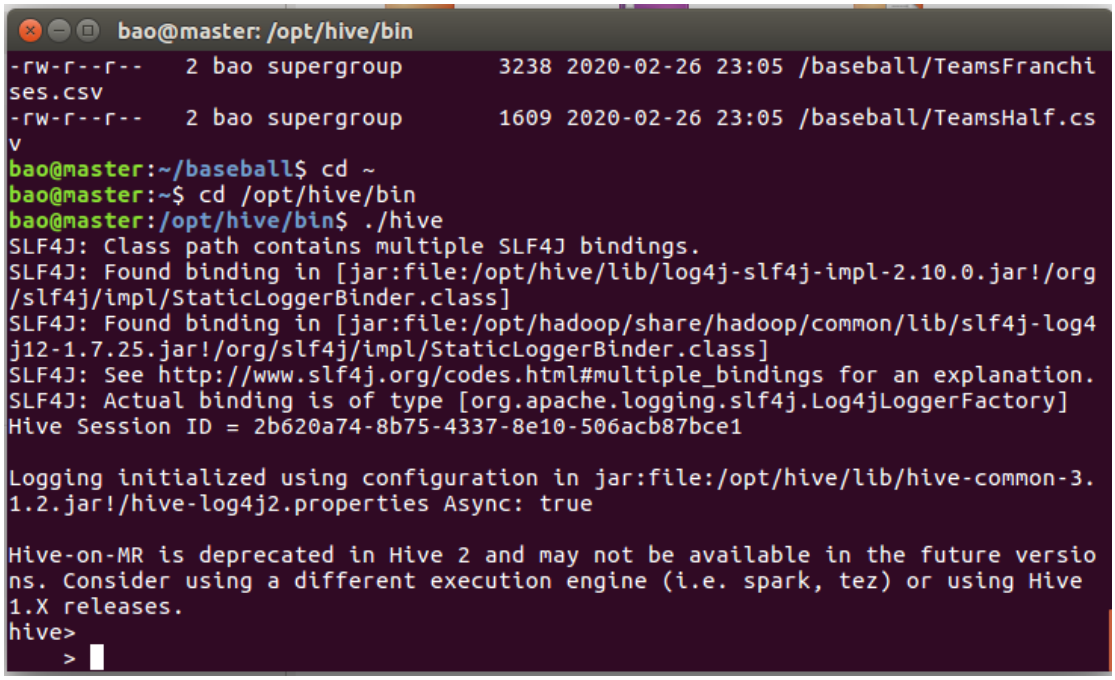


啟動 hive

cd ~

cd /opt/hive/bin

./hive



建立資料庫

create database baseball_****;

Note:****為學號

```
hive> create database baseball_bao ;
OK
Time taken: 0.043 seconds
hive>
```

建立 Hive 資料表，選定某一個想要分析的 CSV 資料，例如：Master.csv

Master 的資料型態如下表所示：

欄位	範例	資料型態
lahmanID	1	INT
playerID	aaronha01	STRING
managerID	NULL	INT
hofID	aaronha01h	STRING
birthYear	1934	INT
birthMonth	2	INT
birthDay	5	INT
birthCountry	USA	STRING
birthState	AL	STRING
birthCity	Mobile	STRING
deathYear	NULL	INT
deathMonth	NULL	INT
deathDay	NULL	INT
deathCountry	NULL	STRING
…略		

在 baseball_**** 中建立 Master 資料表

create table baseball_****.Master

(lahmanID INT, playerID STRING, managerID INT, hofID STRING, birthYear INT, birthMonth INT, birthDay INT, birthCountry STRING, birthState STRING, birthCity STRING, deathYear INT, deathMonth INT, deathDay INT, deathCountry STRING, deathState STRING, deathCity STRING, nameFirst STRING, nameLast STRING, nameNote STRING, nameGiven STRING, nameNick STRING, weight INT, height INT,

bats STRING, throws STRING,debut STRING, finalGame STRING, college STRING, lahman40ID STRING, lahman45ID STRING, retroID STRING, holtzID STRING, bbrefID STRING) ROW FORMAT DELIMITED FIELDS TERMINATED BY ',' ;

Note:****為學號

```
hive> create table baseball_bao.Master
    > (Display all 633 possibilities? (y or n)
    > (ID INT, playerID STRING, managerID INT, hofID STRING, birthYear INT, birt
hMonth INT, birthDay INT, birthCountry STRING, birthState STRING, birthCity STRI
NG, deathYear INT, deathMonth INT, deathDay INT, deathCountry STRING, deathState
 STRING, deathCity STRING, nameFirst STRING, nameLast STRING, nameNote STRING, n
ameGiven STRING, nameNick STRING, weight INT, height INT, bats STRING, throws ST
RING,debut STRING, finalGame STRING, college STRING, lahman40ID STRING, lahman45
ID STRING, retroID STRING, holtzID STRING, bbrefID STRING ) ROW FORMAT DELIMITED
 FIELDS TERMINATED BY ',' ;
OK
Time taken: 0.095 seconds
hive>
```

CSV 檔案匯入資料到 Hive 資料表

LOAD DATA LOCAL INPATH '/home/****/baseball/Master.csv' INTO TABLE baseball_XXXX.Master;

Note:****為 ubuntu 使用者帳戶,XXXX 為學號

檢查匯出結果

SHOW DATABASES;

```
hive> LOAD DATA LOCAL INPATH '/home/bao/baseball/Master.csv' INTO TABLE
    > baseball_bao.Master;
Loading data to table baseball_bao.master
OK
Time taken: 0.24 seconds
hive> SHOW DATABASES;
OK
baseball_bao
default
Time taken: 0.021 seconds, Fetched: 2 row(s)
hive>
```

切換預設的資料庫，變成剛剛產生的 baseball 資料庫中

USE baseball_****; Note:****為學號

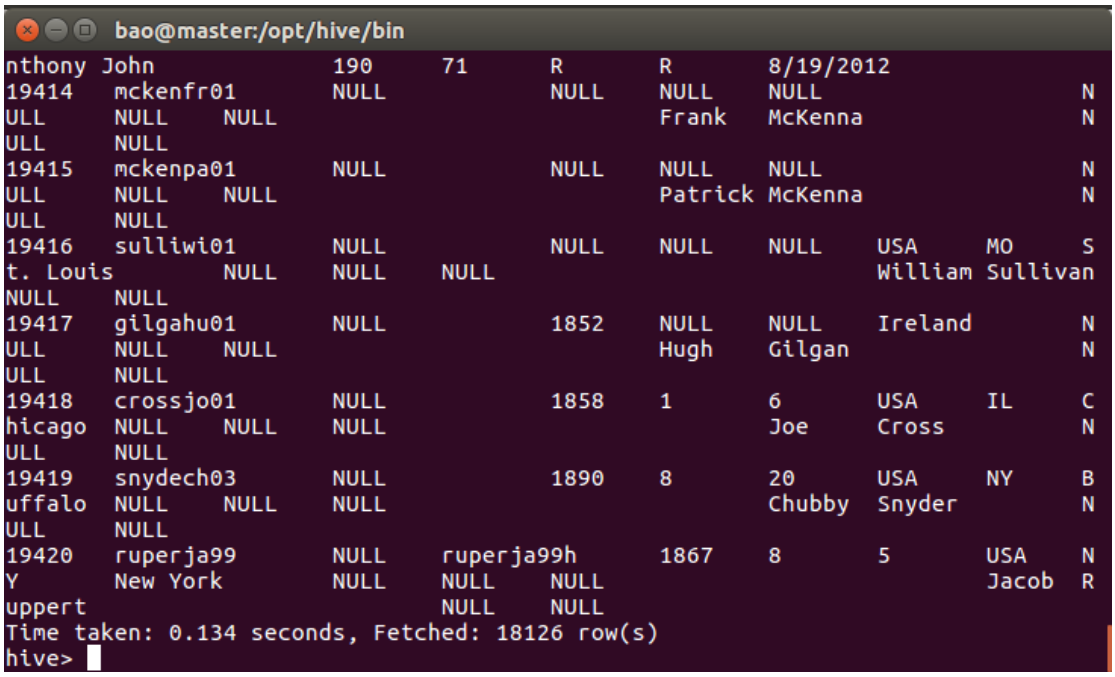
查詢目前的資料庫有哪幾個資料表

SHOW TABLES;

```
hive> SHOW TABLES;
OK
master
Time taken: 0.026 seconds, Fetched: 1 row(s)
hive>
```

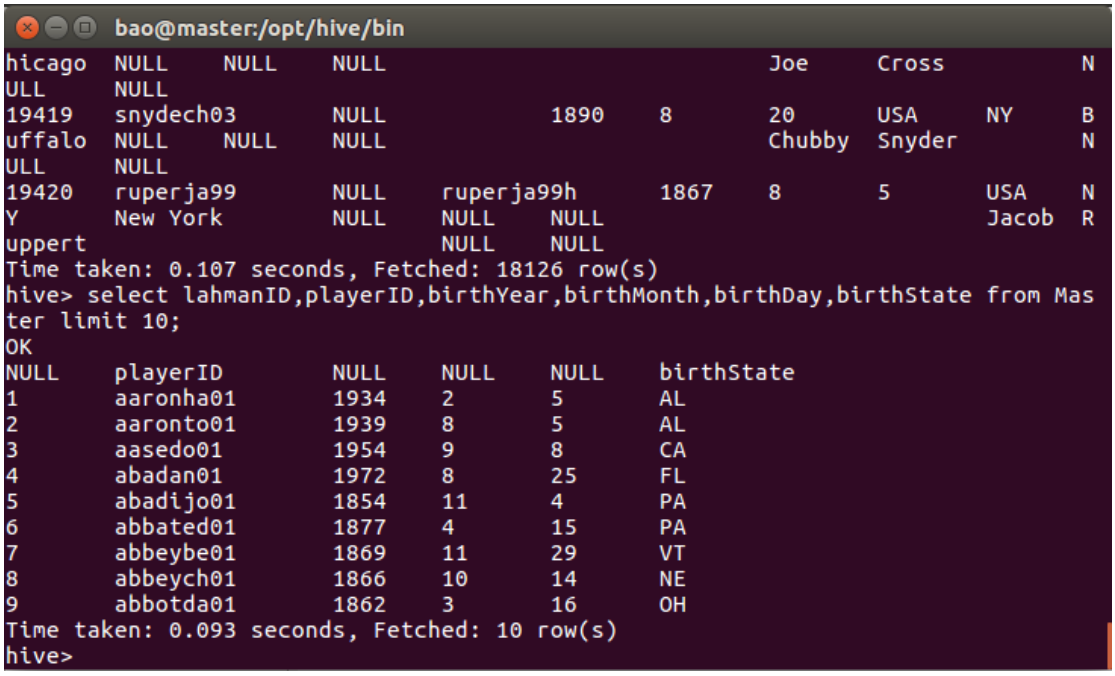
檢查一下剛剛建立的 baseball.master 資料表，內容是否正常

SELECT * FROM Master;



查詢預查詢之欄位資料

select lahmanID,playerID,birthYear,birthMonth,birthDay,birthState from Master limit 10;



建立球隊打擊資料表，並匯入資料

create table baseball_****.Batting

(playerID STRING, yearID INT, stint INT, teamID STRING, lgID STRING, G INT, G_batting INT, AB INT, R INT, H INT, twoB INT, threeB INT, HR INT,

RBI INT, SB INT, CS INT, BB INT, SO INT, IBB INT, HBP INT, SH INT, SF INT, GIDP INT,

G_old INT) ROW FORMAT DELIMITED FIELDS TERMINATED BY ',' ;

Note:****為學號

```
hive> create table baseball_bao.Batting
    > ( playerID STRING, yearID INT, stint INT, teamID STRING, lgID STRING, G IN
T, G_batting INT, AB INT, R INT, H INT, twoB INT, threeB INT, HR INT,
    > RBI INT, SB INT, CS INT, BB INT, SO INT, IBB INT, HBP INT, SH INT, SF INT,
 GIDP INT, G_old INT ) ROW FORMAT DELIMITED FIELDS TERMINATED BY ',' ;
OK
Time taken: 0.069 seconds
```

匯入打擊資料

LOAD DATA INPATH "/baseball/Batting.csv" OVERWRITE INTO TABLE baseball_****.Batting;

Note:****為學號

```
hive> LOAD DATA INPATH "/baseball/Batting.csv" OVERWRITE INTO TABLE baseball_bao
.Batting;
Loading data to table baseball_bao.batting
OK
Time taken: 0.155 seconds
hive> select * from Batting limit 3;
OK
playerID        NULL    NULL    teamID  lgID    NULL    NULL    NULL    NULL    N
ULL     NULL    NULL    NULL    NULL    NULL    NULL    NULL    NULL    N
ULL     NULL    NULL    NULL    NULL
aardsda01       2004    1       SFN     NL      11      11      0       0       0
0       0       0       0       0       0       0       0       0       0
0       0       11
aardsda01       2006    1       CHN     NL      45      43      2       0       0
0       0       0       0       0       0       0       0       0       1
0       0       45
Time taken: 0.115 seconds, Fetched: 3 row(s)
hive>
```

JOIN 跨表查詢

SELECT A.PlayerID, B.teamID, B.AB, B.R, B.H, B.twoB, B.threeB, B.HR, B.RBI FROM Master A JOIN BATTING B ON A.playerID = B.playerID ;

```
bao@master:/opt/hive/bin
zuvelpa01       ATL     5       0       0       0       0       0       0
zuvelpa01       ATL     25      2       5       1       0       0       1
zuvelpa01       ATL     190     16      48      8       1       0       4
zuvelpa01       NYA     48      2       4       1       0       0       2
zuvelpa01       NYA     34      2       6       0       0       0       0
zuvelpa01       CLE     130     9       30      5       1       0       7
zuvelpa01       CLE     58      10      16      2       0       2       6
zuvelpa01       KCA     0       0       0       0       0       0       0
zuverge01       CLE     0       0       0       0       0       0       0
zuverge01       CLE     0       1       0       0       0       0       0
zuverge01       CIN     2       1       1       0       0       0       0
zuverge01       DET     64      1       8       1       0       0       3
zuverge01       DET     4       0       0       0       0       0       0
zuverge01       BAL     23      1       5       1       0       0       0
zuverge01       BAL     17      0       2       0       0       0       2
zuverge01       BAL     23      1       3       0       0       0       0
zuverge01       BAL     9       0       2       0       1       0       2
zuverge01       BAL     0       0       0       0       0       0       0
zwilldu01       CHA     87      7       16      5       0       0       5
zwilldu01       CHF     592     91      185     38      8       16      95
zwilldu01       CHF     548     65      157     32      7       13      94
zwilldu01       CHN     53      4       6       1       0       1       8
Time taken: 30.197 seconds, Fetched: 96610 row(s)
hive>
```

```
source /opt/hadoop/etc/hadoop/hadoop-env.sh
start-all.sh

sudo apt-get install xsltproc
wget http://gis.taiwan.net.tw/XMLReleaseALL_public/hotel_C_f.xml
cat hotel_C_f.xml


gedit hotel.xslt

<?xml version="1.0"?>
<xsl:stylesheet version="1.0"
          xmlns:xsl="http://www.w3.org/1999/XSL/Transform" >
<xsl:output method="text" indent="no"/>
<xsl:template match="/">
   <xsl:for-each select="XML_Head/Infos/Info">
      <xsl:sort select="Zipcode"/>
      <xsl:value-of select="concat(Zipcode,',',Name,',',Add,',',Tel)"/>,
   </xsl:for-each>
</xsl:template>
</xsl:stylesheet>

xsltproc hotel.xslt hotel_C_f.xml>hotel.txt
more hotel.txt

空格替換成逗號

sed 's/\ //g'< hotel.txt >hotel.csv

hdfs dfs -mkdir /etl

hdfs dfs -mkdir /etl/hotel

hdfs dfs -put hotel.csv /etl/hotel


gedit hotel.sql
```

```
CREATE EXTERNAL TABLE hotel(
	zip STRING,
	name STRING,
	add STRING,
	tel STRING
)
ROW FORMAT DELIMITED FIELDS TERMINATED BY ','
STORED AS TEXTFILE LOCATION '/etl/hotel';


cd /opt/hive/bin

hive -S -f /home/kjy/tmp/hive/hotel.sql

hive -S -e "select * from hotel"

hive -S -e "select id, a.namee, b.name, b.add, b.tel from customer a LEFT OUTER JOIN
hotel b ON trim(a.zip) = trim(b.zip)

firefox http://download.post.gov.tw/post/download/Zip32_utf8_10501_1.csv

iconv -f utf16 -t utf8 Zip32_utf8_10501_1.csv>a.csv

hdfs dfs -ls /
hdfs dfs -put a.csv /etl

cd ~/tmp
wget http://data.fda.gov.tw/cacheData/35_2.csv -O dragstore.csv

pig -x local 2>/dev/null

load a = '/home/kjy/tmp/dragstore.csv';
load a = '/home/kjy/Downloads/dragstore.csv';
dump a;

store a into 'hdfs://ubuntu:8020/etl/dragstore.csv' USING PigStorage(',');
```