

We Do Hadoop

Cheat Sheet Hive for SQL Users

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If you're already a SQL user then working with Hadoop may be a little easier than you think, thanks to Apache Hive. Apache Hive is data warehouse infrastructure built on top of Apache™ Hadoop® for providing data summarization, ad hoc query, and analysis of large datasets. It provides a mechanism to project structure onto the data in Hadoop and to query that data using a SQL-like language called HiveQL (HQL).

Use this handy cheat sheet (based on this original MySQL cheat sheet) to get going with Hive and Hadoop.

Additional Resources



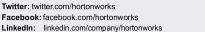
Learn to become fluent in Apache Hive with the Hive Language Manual: https://cwiki.apache.org/confluence/display/Hive/LanguageManual



Get in the Hortonworks Sandbox and try out Hadoop with interactive tutorials: http://hortonworks.com/sandbox



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Query

Function	MySQL	HiveQL
Retrieving information	SELECT from_columns FROM table WHERE conditions;	SELECT from_columns FROM table WHERE conditions;
All values	SELECT * FROM table;	SELECT * FROM table;
Some values	SELECT * FROM table WHERE rec_name = "value";	SELECT * FROM table WHERE rec_name = "value";
Multiple criteria	SELECT * FROM table WHERE rec1="value1" AND rec2="value2";	<pre>SELECT * FROM TABLE WHERE rec1 = "value1" AND rec2 = "value2";</pre>
Selecting specific columns	SELECT column_name FROM table;	SELECT column_name FROM table;
Retrieving unique output records	SELECT DISTINCT column_name FROM table;	SELECT DISTINCT column_name FROM table;
Sorting	SELECT col1, col2 FROM table ORDER BY col2;	SELECT col1, col2 FROM table ORDER BY col2;
Sorting backward	SELECT col1, col2 FROM table ORDER BY col2 DESC;	SELECT col1, col2 FROM table ORDER BY col2 DESC;
Counting rows	SELECT COUNT(*) FROM table;	SELECT COUNT(*) FROM table;
Grouping with counting	SELECT owner, COUNT(*) FROM table GROUP BY owner;	SELECT owner, COUNT(*) FROM table GROUP BY owner;
Maximum value	SELECT MAX(col_name) AS label FROM table;	SELECT MAX(col_name) AS label FROM table;
Selecting from multiple tables (Join same table using alias w/"AS")	SELECT pet.name, comment FROM pet, event WHERE pet.name = event.name;	<pre>SELECT pet.name, comment FROM pet JOIN event ON (pet.name = event.name);</pre>

Metadata

Function	MySQL	HiveQL
Selecting a database	USE database;	USE database;
Listing databases	SHOW DATABASES;	SHOW DATABASES;
Listing tables in a database	SHOW TABLES;	SHOW TABLES;
Describing the format of a table	DESCRIBE table;	DESCRIBE (FORMATTED EXTENDED) table;
Creating a database	CREATE DATABASE db_name;	CREATE DATABASE db_name;
Dropping a database	DROP DATABASE db_name;	DROP DATABASE db_name (CASCADE);







We Do Hadoop

Current SQL Compatibility

Hive SQL Datatypes	Hive SQL Semantics
INT	SELECT, LOAD INSERT from query
TINYINT/SMALLINT/BIGINT	Expressions in WHERE and HAVING
BOOLEAN	GROUP BY, ORDER BY, SORT BY
FLOAT	Sub-queries in FROM clause
DOUBLE	GROUP BY, ORDER BY
STRING	CLUSTER BY, DISTRIBUTE BY
TIMESTAMP	ROLLUP and CUBE
BINARY	UNION
ARRAY, MAP, STRUCT, UNION	LEFT, RIGHT and FULL INNER/OUTER JOIN
DECIMAL	CROSS JOIN, LEFT SEMI JOIN
CHAR	Windowing functions (OVER, RANK, etc)
CARCHAR	INTERSECT, EXCEPT, UNION, DISTINCT
DATE	Sub-queries in WHERE (IN, NOT IN, EXISTS/NOT EXISTS)
	Sub-queries in HAVING

Color Key
Hive 0.10
Hive 0.11
FUTURE

Command Line

Function	Hive
Run query	hive -e 'select a.col from tab1 a'
Run query silent mode	hive -S -e 'select a.col from tab1 a'
Set hive config variables	hive -e 'select a.col from tab1 a' -hiveconf hive.root.logger=DEBUG,console
Use initialization script	hive -i initialize.sql
Run non-interactive script	hive -f script.sql

Hive Shell

Function	Hive
Run script inside shell	source file_name
Run Is (dfs) commands	dfs -ls /user
Run Is (bash command) from shell	!ls
Set configuration variables	set mapred.reduce.tasks=32
TAB auto completion	set hive. <tab></tab>
Show all variables starting with hive	set
Revert all variables	reset
Add jar to distributed cache	add jar jar_path
Show all jars in distributed cache	list jars
Delete jar from distributed cache	delete jar jar_name



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