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Cheat Sheet Hive for SQL Users

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>



Register today for Apache Hadoop Training and Certification at Hortonworks University:

<http://hortonworks.com/training>

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";	SELECT * FROM TABLE WHERE rec1 = "value1" AND rec2 = "value2";
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;	SELECT pet.name, comment FROM pet JOIN event ON (pet.name = event.name);

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);

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 ls (dfs) commands	dfs -ls /user
Run ls (bash command) from shell	!ls
Set configuration variables	set mapred.reduce.tasks=32
TAB auto completion	set hive.<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