

Starting Apache Hive

Date published: 2019-08-21

Date modified:



Legal Notice

© Cloudera Inc. 2025. All rights reserved.

The documentation is and contains Cloudera proprietary information protected by copyright and other intellectual property rights. No license under copyright or any other intellectual property right is granted herein.

Unless otherwise noted, scripts and sample code are licensed under the Apache License, Version 2.0.

Copyright information for Cloudera software may be found within the documentation accompanying each component in a particular release.

Cloudera software includes software from various open source or other third party projects, and may be released under the Apache Software License 2.0 (“ASLv2”), the Affero General Public License version 3 (AGPLv3), or other license terms. Other software included may be released under the terms of alternative open source licenses. Please review the license and notice files accompanying the software for additional licensing information.

Please visit the Cloudera software product page for more information on Cloudera software. For more information on Cloudera support services, please visit either the Support or Sales page. Feel free to contact us directly to discuss your specific needs.

Cloudera reserves the right to change any products at any time, and without notice. Cloudera assumes no responsibility nor liability arising from the use of products, except as expressly agreed to in writing by Cloudera.

Cloudera, Cloudera Altus, HUE, Impala, Cloudera Impala, and other Cloudera marks are registered or unregistered trademarks in the United States and other countries. All other trademarks are the property of their respective owners.

Disclaimer: EXCEPT AS EXPRESSLY PROVIDED IN A WRITTEN AGREEMENT WITH CLOUDERA, CLOUDERA DOES NOT MAKE NOR GIVE ANY REPRESENTATION, WARRANTY, NOR COVENANT OF ANY KIND, WHETHER EXPRESS OR IMPLIED, IN CONNECTION WITH CLOUDERA TECHNOLOGY OR RELATED SUPPORT PROVIDED IN CONNECTION THEREWITH. CLOUDERA DOES NOT WARRANT THAT CLOUDERA PRODUCTS NOR SOFTWARE WILL OPERATE UNINTERRUPTED NOR THAT IT WILL BE FREE FROM DEFECTS NOR ERRORS, THAT IT WILL PROTECT YOUR DATA FROM LOSS, CORRUPTION NOR UNAVAILABILITY, NOR THAT IT WILL MEET ALL OF CUSTOMER’S BUSINESS REQUIREMENTS. WITHOUT LIMITING THE FOREGOING, AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, CLOUDERA EXPRESSLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, QUALITY, NON-INFRINGEMENT, TITLE, AND FITNESS FOR A PARTICULAR PURPOSE AND ANY REPRESENTATION, WARRANTY, OR COVENANT BASED ON COURSE OF DEALING OR USAGE IN TRADE.

Contents

Start Hive on an insecure cluster.....	4
Start Hive using a password.....	5
Run a Hive command.....	8
Converting Hive CLI scripts to Beeline.....	9

Start Hive on an insecure cluster

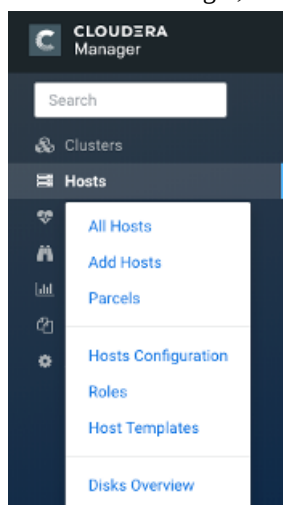
If you want to use Apache Hive for a quick test, you can do so using Hive default authorization mode, assuming you are on an insecure cluster (no Kerberos or Ranger policies). In default authorization mode, only user hive can access Hive. Steps to start the Hive shell, not to be mistaken with the Hive CLI that CDP does not support, include how to log into a cluster.

About this task

From the cluster command line, you type hive on the command line of your cluster to start the Hive shell. In the background, Beeline launches the Hive shell.

Procedure

1. In CDP Public Cloud, in Environments *YOUR CLUSTER NAME* CM URL .
2. In Cloudera Manager, click Hosts All Hosts .



3. Make a note of the IP address or host name of a node in your cluster, for example myhost-vpc.cloudera.com.
4. Use ssh to log into the cluster.
For example:

```
ssh myhost-vpc.cloudera.com
```

5. Type hive to start Hive from the command line.
6. Enter Hive queries.

```
SHOW DATABASES;
```

```
CREATE TABLE students (name VARCHAR(64), age INT, gpa DECIMAL(3,2));
```

```
INSERT INTO TABLE students VALUES ('fred flintstone', 35, 1.28), ('barney rubble', 32, 2.32);
```

Start Hive using a password

You start the Hive shell using a Beeline command to query Hive as an end user authorized by Apache Ranger. As administrator, you set up the end user in the operating system and in Ranger.

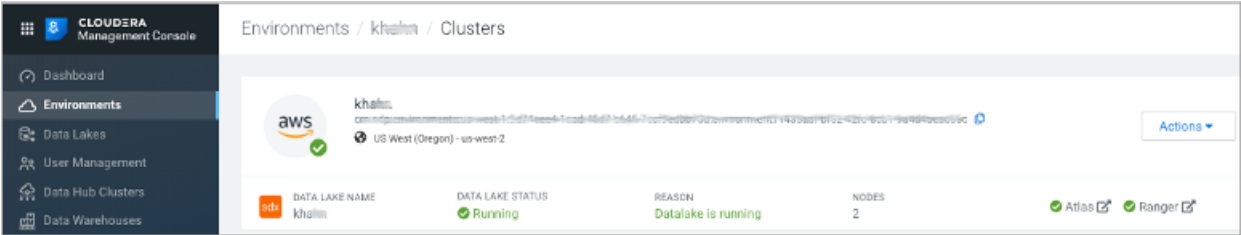
About this task

Before starting Hive for the first time, you might want to check that you are covered by Ranger policies required for basic operations as shown in the following steps. All users need to use the default database, perform operations such as listing database names, and query the information schema. The preloaded default database tables columns and information_schema database Ranger policies cover group public (all users). If these policies are disabled, you cannot use the default database, perform basic operations such as listing database names, or query the information schema. For example, if the default database tables columns policy is disabled, the following error appears if you try to use the default database:

```
hive> USE default;
Error: Error while compiling statement: FAILED: HiveAccessControlException
Permission denied: user [hive] does not have [USE] privilege on [default]
```

Procedure

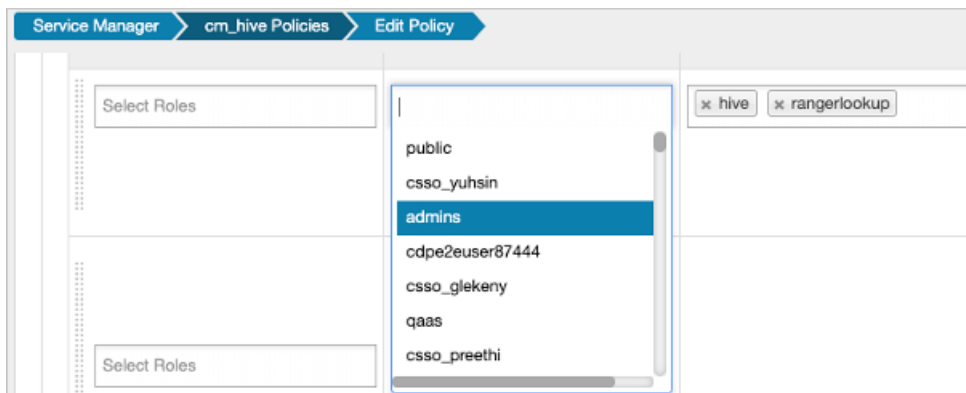
- 1. In CDP Public Cloud, navigate to Environments *YOUR ENVIRONMENT*.



- 2. On the far right, click Ranger cm_hive and in Allow Conditions, edit all - database, table, column.

Policy ID	Policy Name	Policy Labels	Status	Audit Logging	Roles	Groups	Users	Action
7	all - hiveservice	--	Enabled	Enabled	--	--	hive rangerlookup impala	
8	all - global	--	Enabled	Enabled	--	--	hive rangerlookup impala	
9	all - database, table, column	--	Enabled	Enabled	--	admins	hive rangerlookup impala	

3. Add your user or group name to Hive policies to grant full access to Hive.
For example, add the admins group name to the list of groups that can access Hive.

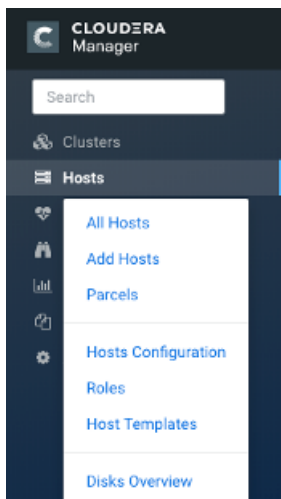


4. Check that the preloaded default database tables columns and information_schema database policies are enabled for group public.

Policy ID	Policy Name	Policy Labels	Status	Audit Logging	Roles	Groups	Users
7	all - global	--	Enabled	Enabled	--	--	hive beacon dpprofiler hue + More..
8	all - database, table, column	--	Enabled	Enabled	--	--	hive beacon dpprofiler hue + More..
9	all - database, table	--	Enabled	Enabled	--	--	hive beacon dpprofiler hue + More..
10	all - database	--	Enabled	Enabled	--	public	hive beacon dpprofiler hue + More..
11	all - hiveservice	--	Enabled	Enabled	--	--	hive beacon dpprofiler hue + More..
12	all - database, udf	--	Enabled	Enabled	--	--	hive beacon dpprofiler hue + More..
13	all - url	--	Enabled	Enabled	--	--	hive beacon dpprofiler hue + More..
14	default database tables columns	--	Enabled	Enabled	--	public	--
15	Information_schema database ...	--	Enabled	Enabled	--	public	--

5. In Environments *YOUR ENVIRONMENT YOUR CLUSTER*, click the CM-URL.

6. In Cloudera Manager, click **Hosts All Hosts**.



7. Make a note of the IP address or host name of a node in your cluster, for example `myhost-vpc.cloudera.com`.

8. Use `ssh` to log into the cluster.

For example:

```
ssh myhost-vpc.cloudera.com
```

You can get help about starting the Hive shell. On the command line, type

```
hive -h
```

Output is:

```
Connect using simple authentication to HiveServer2 on localhost:10000
beeline -u jdbc:hive2://localhost:10000 username password
```

```
Connect using simple authentication to HiveServer2 on hs.local:10000 using
-n for username and -p for password
beeline -n username -p password -u jdbc:hive2://hs2.local:10012
```

```
Connect using Kerberos authentication with hive/localhost@mydomain.com as
HiveServer2 principal
beeline -u "jdbc:hive2://hs2.local:10013/default;principal=hive/localhost@mydomain.com"
```

```
Connect using SSL connection to HiveServer2 on localhost at 10000
beeline "jdbc:hive2://localhost:10000/default;ssl=true;sslTrustStore=/usr/local/truststore;trustStorePassword=mytruststorepassword"
```

```
Connect using LDAP authentication
beeline -u jdbc:hive2://hs2.local:10013/default <ldap-username> <ldap-password>
```

9. Using the fully qualified domain name or IP address a node in your cluster from Cloudera Manager Hosts Role(s) and looking through the list of roles to find HS2 (Hive on Tez HiveServer2). For example:

Hosts	Count	Roles
ip-10-97-84-212.cloudera.site; ip-10-97-85-[91, 163].cloudera.site	3	 G  DN  G  G  L G  G  G  G  G  G  G  NM
ip-10-97-85-16.cloudera.site	1	 Hive on Tez HiveServer2  SNN  G  HMS  G  HS2  LB  HS  KTR  KG  LS  AP  ES  HM  RM  SM  TP  OS  G  HS  G  JHS  RM  ZS  S

This node has the HiveServer role, so you can use the name or IP address in Beeline.

10. Start the Hive shell.

- Use your user name if your cluster security is set up.
- Use the user name hive and no password.

Substitute the name or IP address of your HiveServer host for 10.65.13.98.

Simple authentication:

```
beeline -u jdbc:hive2://10.65.13.98:10000 -n <your user name> -p
```

Kerberos:

```
beeline -u "jdbc:hive2://10.65.13.98:10000/default;principal=hive/_HOST@CLLOUDERA.SITE"
```

11. Enter Hive queries.

```
SHOW DATABASES;
```

```
CREATE TABLE students (name VARCHAR(64), age INT, gpa DECIMAL(3,2));
```

```
INSERT INTO TABLE students VALUES ('fred flintstone', 35, 1.28), ('barney rubble', 32, 2.32);
```

Related Information

[Configure a Resource-based Policy: Hive](#)

Run a Hive command

You can run most Hive commands that push configuration variables to Hive SQL scripts from the command line of a node in your cluster. You use a keyword and options to launch these commands in Beeline.

About this task

Hive supports running Hive commands from the command line. The command you enter launches Beeline in the background. The `-e` flag followed by a Hive set command lists system variables.

- On the command line of a node in your cluster, define and export a variable named HIVEVAR, for example, and set it to execute the conversion script.

```
export HIVEVAR=`./env_to_hivevar.sh`
```

- Define and export variables to hold a few variables for testing the conversion.

```
export LOC_TIME_ZONE="US/EASTERN"
export MY_TEST_VAR="TODAY"
```

- On the command line of a cluster node, test the conversion: Execute a command that references HIVEVAR to parse a SQL statement, remove the incompatible env namespace, and execute the remaining SQL.

```
hive ${HIVEVAR} -e 'select "${env:LOC_TIME_ZONE}";'
```

```
+-----+
|      _c0      |
+-----+
| US/EASTERN    |
+-----+
```

- Create a text file named init_var.sql to simulate a legacy script that sets two configuration parameters, one in the problematic env namespace.

```
set mylocal.test.var=hello;
set mylocal.test.env.var=${env:MY_TEST_VAR};
```

- Include these configuration parameters in the allowlist: In Cloudera Manager, go to Clusters HIVE_ON_TEZ-1 Configuration, and search for hive-site.
- In HiveServer2 Advanced Configuration Snippet (Safety Valve) for hive-site.xml, add the property key: hive.security.authorization.sqlstd.confwhitelist.append. See link below.
- Provide the property value, or values, to allowlist, for example: mylocal\..*|junk.
This action appends mylocal.test.var and mylocal.test.env.var parameters to the allowlist.
- Save configuration changes, and restart any components as required.
- Execute a command that references HIVEVAR to parse a SQL script, removes the incompatible env namespace, and executes the remaining SQL, including the whitelisted configuration parameters identified by hiveconf:.

```
hive -i init_var.sql ${HIVEVAR} -e 'select "${hiveconf:mylocal.test.var}"
,"${hiveconf:mylocal.test.env.var}";'
```

```
+-----+-----+
|  _c0  |  _c1  |
+-----+-----+
| hello | TODAY |
+-----+-----+
```

Related Information

[Custom Configuration \(about Cloudera Manager Safety Valve\)](#)

[Example of using the Cloudera Manager Safety Valve](#)