



Configuring Drill JDBC driver with Splunk DB Connect

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This post explains on how to setup Apache Drill JDBC driver with Splunk DB Connect.

Environment :

Centos 6.6

Splunk 6.6.2

Splunk db connect 3.1.0

Drill 1.10

MapR 5.2.0

1) Download the splunk enterprise version for Linux. You have to register account for downloading trial version.

https://www.splunk.com/en_us/download/splunk-enterprise.htm

The RPM downloaded in my case is “splunk-6.6.2-4b804538c686-linux-2.6-x86_64.rpm”

2) Copy the downloaded rpm to server and install it.

```
# Assuming rpm is copied to /tmp directory in server. Installing to /opt/splunk directory.  
rpm -i --prefix=/opt/splunk /tmp/splunk-6.6.2-4b804538c686-linux-2.6-x86_64.rpm
```

3) Download splunk db connect app ‘splunk-db-connect_310.tgz’ (3.1.0 version) from below URL

<https://splunkbase.splunk.com/app/2686/#/overview>.

4) Untar the splunk-db-connect_310.tgz and copy it to /opt/splunk/splunk/etc/apps

```
tar -xvzf /tmp/splunk-db-connect_310.tgz -C /opt/splunk/splunk/etc/apps
```

5) Start splunk service using below command for first time by accepting license.

```
/opt/splunk/splunk/bin/splunk start --accept-license
```

6) Download MapR Drill JDBC driver from following link – . The DrillJDBC41.zip contains driver jar ‘DrillJDBC41.jar’ and other dependent jars.

http://package.mapr.com/tools/MapR-JDBC/MapR_Drill/MapRDrill_jdbc_v1.5.3.1006/

7) Copy driver jar that contains Driver class ('DrillJDBC41.jar') to /opt/splunk/splunk/etc/apps/splunk_app_db_connect/drivers. Create a directory 'DrillJDBC41-libs' inside 'drivers' and copy dependent jars to this directory.

```
[root@arjun-lab-73 drivers]# ls -ltrh /opt/splunk/splunk/etc/apps/splunk_app_db_connect/drivers  
  
-rw-r--r--. 1 root root 582K Aug 9 01:37 DrillJDBC41.jar  
drwxrwxrwx. 2 root root 4.0K Aug 9 01:37 DrillJDBC41-libs  
[root@arjun-lab-73 drivers]#
```

8) Define connection type details in below configuration file.
/opt/splunk/splunk/etc/apps/splunk_app_db_connect/local/db_connection_types.conf.

```
[root@arjun-lab-73 local]# cat db_connection_types.conf  
[default]  
  
[drill]  
displayName = drill  
serviceClass = com.splunk.dbx2.DefaultDBX2JDBC  
jdbcDriverClass = com.mapr.drill.jdbc41.Driver  
jdbcUrlFormat = jdbc:drill:drillbit=<host>:<port>  
useConnectionPool = false
```

9) Connect to Splunk UI and create identities and Drill connection with connection URL specific to environment.

The screenshot shows the 'New Identity' configuration page in the Splunk DB Connect interface. The page has a 'Settings' tab and a 'Permissions' tab. The 'Settings' tab is active, showing fields for 'Identity Name', 'Username', and 'Password'. There is an 'Optional' checkbox for 'Use Windows Authentication Domain'. Below this, there is a 'Windows Authentication Domain' field. At the bottom of the page, there is a footer with links for 'About', 'Support', 'File a Bug', 'Documentation', and 'Privacy Policy', and a copyright notice for Splunk Inc.

Create Identity with user name and password for Drill user

New Connection

Settings Permissions

Connection Name

Identity: mapr

Connection Type: drill

Timezone: America/Los_Angeles - 07:00

Host: arjun-lab-72

Port: 31010

Default Database: root

JDBC URL Settings

JDBC URL Preview: jdbc:drill:drillbit-arjun-lab-72:31010

☐ Enable SSL

Create Database connection with identity, host and port details

10) Validate the connection with sample queries in SQL explorer.

SQL Explorer

Explore data and test queries with connected databases. [Learn More](#)

Choose Table: Connection (Drill-72), Catalog (DRILL), Schema (INFORMATION_SCHEMA), Table

SQL Editor: `select * from sys.options`

SPL Editor: `1 | dbquery query="select * from sys.options" connection="Drill-72"`

	bool_val	float_val	kind	name	num_val	status	string_val	type
1	0		BOOLEAN	drill.exec.functions.cast_empty_string_to_null		DEFAULT		SYSTEM
2			STRING	drill.exec.storage.file.partition.column.label		DEFAULT	dir	SYSTEM
3			STRING	drill.exec.storage.implicit.filename.column.label		DEFAULT	filename	SYSTEM
4			STRING	drill.exec.storage.implicit.filepath.column.label		DEFAULT	filepath	SYSTEM
5			STRING	drill.exec.storage.implicit.fqn.column.label		DEFAULT	fqn	SYSTEM
6			STRING	drill.exec.storage.implicit.suffix.column.label		DEFAULT	suffix	SYSTEM
7			LONG	exec.bulk_load_table_list.bulk_size	1000	DEFAULT		SYSTEM
8	0		BOOLEAN	exec.enable_bulk_load_table_list		DEFAULT		SYSTEM
9	0		BOOLEAN	exec.enable_union_type		DEFAULT		SYSTEM
10	1		BOOLEAN	exec.errors.verbose		CHANGED		SYSTEM

Test connection using SQL explorer

11) If environment is MapR secure cluster, We would require to set below property as JVM option in DB connect settings.

-Djava.security.auth.login.config=/path/to/mapr.login.conf

Settings

General Drivers Logging Usage Collection

Configure settings related to the Java environment and Task Server. [Learn More](#)

JRE Installation Path (JAVA_HOME): /opt/jdk1.8.0_141

JVM Options: -Djava.security.auth.login.config=/opt/splunk/app-svc/etc/apps/splunk_app_db_connect/mapr.login.conf

Task Server Port: 9999

Another observation is that – With above settings in MapR secure cluster , We would be able to list databases/Tables from left side panel in SQL explorer. But it failed with below exception while querying from SQL editor window.

```
java.sql.SQLException: [MapR][Drill]JDBCDriver](500150) Error setting/closing connection:
```

The corresponding job log shows below exception.

```
08-10-2017 11:38:04.664 ERROR ChunkedExternProcessor – stderr: Caused by:
com.mapr.support.exceptions.ErrorException: javax.security.sasl.SaslException: Authentication
failed unexpectedly. [Caused by java.util.concurrent.ExecutionException:
javax.security.sasl.SaslException: Failed to login. [Caused by
javax.security.auth.login.LoginException: No LoginModules configured for hadoop_simple]]
```

Below step helped to resolve the issue.

1) Edit /opt/splunk/splunk/etc/apps/splunk_app_db_connect/linux_x86_64/bin/command.sh to include ‘-Djava.security.auth.login.config=/opt/splunk/splunk/etc/apps/splunk_app_db_connect/mapr.login.conf’ property. Below is change.

```
[root@arjun-lab-73 bin]# cat
/opt/splunk/splunk/etc/apps/splunk_app_db_connect/linux_x86_64/bin/command.sh
SCRIPT=$(readlink -f "$0")
JAVA_PATH_FILE=$(dirname "$SCRIPT")/customized.java.path

if [ -f $JAVA_PATH_FILE ]; then
  JAVA_CMD= `cat $JAVA_PATH_FILE `
elif [ ! -z "$JAVA_HOME" ];then
  JAVA_CMD="$JAVA_HOME/bin/java"
else
  JAVA_CMD="java"
fi
export DRILL_OPTS="-
Djava.security.auth.login.config=/opt/splunk/splunk/etc/apps/splunk_app_db_connect/mapr.login.conf"
exec $JAVA_CMD $DRILL_OPTS $@
#exec $JAVA_CMD $@
[root@arjun-lab-73 bin]
```

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