

Using Ambari with MySQL

By default, Ambari uses Postgres DB. I have decided to use MySQL because it's the only database is acceptable for Hive, HBase, Ambari, Zookeeper etc installation

Check whether MySQL is installed and running

```
[root@ambarihost bin]# service mysqld status
mysqld is stopped
```

I had previously opted and installed MySQL packages during the OS install so I will use this version. See below steps to remove and re-install a newer MySQL package.

```
[root@ambarihost bin]# service mysqld start
Initializing MySQL database: Installing MySQL system tables...OK
Filling help tables...OK
To start mysqld at boot time you have to copy support-files/mysql.server to the right place
for your system
PLEASE REMEMBER TO SET A PASSWORD FOR THE MySQL root USER ! To do so, start the
server, then issue the following commands:
/usr/bin/mysqladmin -u root password 'new-password'
/usr/bin/mysqladmin -u root -h texas.com password 'new-password'
Alternatively you can run: /usr/bin/mysql_secure_installation
which will also give you the option of removing the test databases and anonymous user
created by default. This is strongly recommended for production servers.
See the manual for more instructions.
You can start the MySQL daemon with: cd /usr ; /usr/bin/mysqld_safe &
You can test the MySQL daemon with mysql-test-run.pl cd /usr/mysql-test ; perl mysql-test-
run.pl
Please report any problems with the /usr/bin/mysqlbug script!
Starting mysqld:                [ OK ]
                                [ OK ]
```

```
[root@ambarihost ~]# service mysqld status
mysqld (pid 1880) is running...
```

Automate the MySQL server startup at boot

```
[root@ambarihost ~]# chkconfig --level 345 mysqld on
```

Optinally Uninstall MySQL Packages

First uninstall all the MySQL packages installed on your server

```
[root@ambarihost ~]# yum remove mysql mysql-server
```

Remove MySQL Directory

Remove MySQL data directory from system which by default exists at /var/lib/mysql. It may be changed to some other place, which you can find in my.cnf file with variable datadir. Delete the /var/lib/mysql directory from system but we prefer to rename it to keep a backup of existing files.

```
[root@ambarihost ~]# mv /var/lib/mysql /var/lib/mysql_old_backup
```

Optional re-Install MySQL

Stop and uninstall/remove the current version

```
[root@ambarihost html]# service mysqld stop
[root@ambarihost html]# yum remove mysql mysql-server
[root@ambarihost html]# mv /var/lib/mysql /var/lib/mysql_old_backup
```

Reinstall the MySQL

```
[root@ambarihost html]# yum install mysql mysql-server
Loaded plugins: aliases, changelog, downloadonly, fastestmirror, presto, security, tmprepo,
verify, versionlock
Setting up Install Process
Loading mirror speeds from cached hostfile
* base: mirror.switch.ch
* centosplus: mirror.switch.ch
....
Some output removed here
.....
mysql-server.x86_64 0:5.1.73-5.el6_6
Complete!
```

Take note of all the password and database name you will need them when setting up the Ambari server

Check if MySQL is running

```
root@ambarihost ~]# mysqladmin -u root -p status
Enter password:
Uptime: 134 Threads: 7 Questions: 604 Slow queries: 0 Opens: 30 Flush tables: 1 Open
tables: 23 Queries per second avg: 4.507
```

I had to reset the MySQL password to do so follow the below process

```
[root@ambarihost html]# service mysqld stop
Stopping mysqld: [ OK ]
```

Reset the MySQL password

Having installed the MySQL rpm I didn't know the default password so I had to reset

```
[root@ambarihost html]# mysqladmin -u root -h texas.com password 'tototo'
[root@ambarihost html]# mysqladmin -u root password 'tototo'
```

Try out the new password and it seems to work out well

```
[root@ambarihost html]# mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 6
Server version: 5.1.73 Source distribution
Copyright (c) 2000, 2013, Oracle and/or its affiliates. All rights reserved. Oracle is a registered
trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of
their respective owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> select user();
+-----+
| user()          |
+-----+
| root@localhost |
+-----+
1 row in set (0.01 sec)
```

Install MySQL connector

The Ambari Server host needs the MySQL driver installed to be able to communicate with the database, so I installed the the CentOS MySQL connector

```
[root@ambarihost bin]# yum install mysql-connector-java
Loaded plugins: fastestmirror, security
Setting up Install Process
Loading mirror speeds from cached hostfile
* base: mirror.switch.ch
* epel: mirror.de.leaseweb.net
....
Some output remove here
....
Warning: RPMDB altered outside of yum.
Installing: 1:mysql-connector-java-5.1.17-6.el6.noarch
1/1
Verifying : 1:mysql-connector-java-5.1.17-6.el6.noarch
1/1
Installed:
mysql-connector-java.noarch 1:5.1.17-6.el6
Complete!
```

Confirm that .jar is in the Java share directory. Make sure the .jar file has the appropriate permissions - 644.

```
[root@ambarihost ~]# ls -al /usr/share/java/mysql-connector-java.jar
-rw-r--r--. 1 root root 819803 Jun 22  2012 mysql-connector-java-5.1.17.jar
lrwxrwxrwx. 1 root root   31 Nov  8 20:51 mysql-connector-java.jar -> mysql-connector-
java-5.1.17.jar
```

Set up MySQL for Ambari

Create a user for Ambari and grant it permissions.

Make sure the MySQL database admin utility exits without error like below

```
[root@ambarihost html]# mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 6
Server version: 5.1.73 Source distribution
Copyright (c) 2000, 2013, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may
be trademarks of their respective owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> select user();
+-----+
| user() |
+-----+
| root@localhost |
+-----+
1 row in set (0.01 sec)
mysql> CREATE USER 'ambari'@'%' IDENTIFIED BY 'ambaridba';
Query OK, 0 rows affected (0.00 sec)
mysql> GRANT ALL PRIVILEGES ON *.* TO 'ambari'@'%';
Query OK, 0 rows affected (0.00 sec)
mysql> CREATE USER 'ambari'@'localhost' IDENTIFIED BY 'ambaridba';
Query OK, 0 rows affected (0.00 sec)
mysql> GRANT ALL PRIVILEGES ON *.* TO 'ambari'@'localhost';
Query OK, 0 rows affected (0.00 sec)
mysql> CREATE USER 'ambari'@'texas.com' IDENTIFIED BY 'ambaridba';
Query OK, 0 rows affected (0.00 sec)
mysql> GRANT ALL PRIVILEGES ON *.* TO 'ambari'@'texas.com';
Query OK, 0 rows affected (0.00 sec)
mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)
```

Where ambari is the Ambari user name, ambaridba is the Ambari user password and texas.com is the Fully Qualified Domain Name of the Ambari Server host.

Install the Ambari server

```
[root@ambarihost]# wget -nv http://public-repo-
1.hortonworks.com/ambari/centos6/2.x/updates/2.1.0/ambari.repo -O
/etc/yum.repos.d/ambari.repo
2015-12-20 19:29:35 URL:http://public-repo-
1.hortonworks.com/ambari/centos6/2.x/updates/2.1.0/ambari.repo [280/280] ->
"/etc/yum.repos.d/ambari.repo"
```

```
[root@ambarihost yum.repos.d]# yum install ambari-server
Loaded plugins: aliases, changelog, downloadonly, fastestmirror, presto, security, tmprepo,
verify, versionlock
Setting up Install Process
Loading mirror speeds from cached hostfile
* base: mirror.switch.ch
* centosplus: mirror.switch.ch
* contrib: mirror.switch.ch
* epel: mirror.fraunhofer.de
* extras: mirror.switch.ch
Dependencies Resolved
=====
Package Arch Version
Repository Size
=====
Installing:
ambari-server x86_64 2.1.0-1470
Updates-ambari-2.1.0 326 M
Installing for dependencies:
postgresql x86_64 8.4.20-4.el6_7
updates
postgresql-server x86_64 8.4.20-4.el6_7
updates
Updating for dependencies:
postgresql-libs x86_64 8.4.20-4.el6_7
updates
Transaction Summary
.....
Some output remove here
....
4/5
Verifying : postgresql-libs-8.4.20-1.el6_5.x86_64
5/5
Installed:
ambari-server.x86_64 0:2.1.0-1470
Dependency Installed:
postgresql.x86_64 0:8.4.20-4.el6_7
postgresql-server.x86_64 0:8.4.20-4.el6_7
Dependency Updated:
postgresql-libs.x86_64 0:8.4.20-4.el6_7
```

Load the Ambari Server database schema into the MySQL DB.

Pre-load the Ambari database schema into your MySQL database using the schema script `Ambari-DDL-MySQL-CREATE.sql` found in the `/var/lib/ambari-server/resources/` directory of the Ambari Server host after yum install ambari-server earlier.

```
[root@ambarihost ]# mysql -u ambari -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 7
Server version: 5.1.73 Source distribution Copyright (c) 2000, 2013, Oracle and/or its
affiliates. All rights reserved.
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be trademarks of their respective owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> CREATE DATABASE ambaridb;
Query OK, 1 row affected (0.00 sec)
mysql> USE ambaridb;
Database changed
mysql> SOURCE /var/lib/ambari-server/resources/Ambari-DDL-MySQL-CREATE.sql;
Query OK, 0 rows affected (0.01 sec)
Query OK, 0 rows affected (0.00 sec)
Query OK, 0 rows affected (0.01 sec)
.....
Query OK, 0 rows affected (0.00 sec)
Query OK, 0 rows affected (0.00 sec)
Query OK, 0 rows affected (0.01 sec)
.....
.....
Query OK, 0 rows affected (0.00 sec)
Query OK, 0 rows affected (0.01 sec)
Query OK, 0 rows affected (0.00 sec)
Query OK, 0 rows affected (0.00 sec)
mysql>quit
```

Then Quit

Set up the Ambari server

When setting up the Ambari Server, the setup will initially check for SELinux and JDK versions be sure to select the correct options, then in the Advanced Database Configuration I selected Option [3] MySQL as I did want to use the default postgres DB and enter the credentials you defined in Using Ambari with MySQL earlier by giving the DB credentials user name, password and database name.

```
[root@hadoop01 resources]# ambari-server setup
Using python /usr/bin/python2.6
Setup ambari-server
Checking SELinux...
```

```
SELinux status is 'disabled'
Customize user account for ambari-server daemon [y/n] (n)? y
Enter user account for ambari-server daemon (root):hdp
Adjusting ambari-server permissions and ownership...
Checking firewall status...
Checking JDK...
[1] Oracle JDK 1.8 + Java Cryptography Extension (JCE) Policy Files 8
[2] Oracle JDK 1.7 + Java Cryptography Extension (JCE) Policy Files 7
[3] Custom JDK
=====
=====
Enter choice (3):
To download the Oracle JDK and the Java Cryptography Extension (JCE) Policy Files you
must accept the license terms found at
http://www.oracle.com/technetwork/java/javase/terms/license/index.html and not accepting
will cancel the Ambari Server setup and you must install the JDK and JCE files manually.
Do you accept the Oracle Binary Code License Agreement [y/n] (y)? y
Downloading JDK from http://public-repo-1.hortonworks.com/ARTIFACTS/jdk-8u40-linux-
x64.tar.gz to /var/lib/ambari-server/resources/jdk-8u40-linux-x64.tar.gz
jdk-8u40-linux-x64.tar.gz... 100% (165.2 MB of 165.2 MB)
Successfully downloaded JDK distribution to /var/lib/ambari-server/resources/jdk-8u40-linux-
x64.tar.gz
Installing JDK to /usr/jdk64/
Successfully installed JDK to /usr/jdk64/
Downloading JCE Policy archive from http://public-repo-
1.hortonworks.com/ARTIFACTS/jce_policy-8.zip to /var/lib/ambari-
server/resources/jce_policy-8.zip
Successfully downloaded JCE Policy archive to /var/lib/ambari-server/resources/jce_policy-
8.zip
Installing JCE policy...
Completing setup...
Configuring database...
Enter advanced database configuration [y/n] (n)? y
Configuring database...
=====
=====
Choose one of the following options:
[1] - PostgreSQL (Embedded)
[2] - Oracle
[3] - MySQL
[4] - PostgreSQL
[5] - Microsoft SQL Server (Tech Preview)
=====
=====
Enter choice (1): 3
Hostname (localhost):
Port (3306):
Database name (ambari): ambari
Username (ambari): ambari
Enter Database Password (bigdata): ambaridba
Re-enter password:
Configuring ambari database...
```

```
Copying JDBC drivers to server resources...
Configuring remote database connection properties...
WARNING: Before starting Ambari Server, you must run the following DDL against the
database to create the schema: /var/lib/ambari-server/resources/Ambari-DDL-MySQL-
CREATE.sql
Proceed with configuring remote database connection properties [y/n] (y)? y
Extracting system views...
...ambari-admin-2.1.0.1470.jar
...
Adjusting ambari-server permissions and ownership...
Ambari Server 'setup' completed successfully.
```