Installation of MySQL and HBase

1. Installation of Chosen Database Systems:

1.1 Steps for installing HBase:

Setup Hadoop before HBase:

1. Install the required software packages openjdk-8-jre, openjdk-8-jdk, ssh and rsync.

Below are the commands,

sudo apt-get install openjdk-8-jdk

sudo apt-get install open-8-jre

sudo apt-get install ssh

sudo apt-get install rsync

2. Add a new user for running Hadoop

   sudo addgroup Hadoop

   sudo adduser --ingroup hadoop hduser

   sudo adduser hduser sudo - To add hduser to the sudo group

3. Configure ssh

   - Swich to hduser- su – hduser

   - Generate an ssh key for the user- ssh-keygen -t rsa -P ""

   - Add the above key in authorized_keys file- cat $HOME/.ssh/id_rsa.pub >> $HOME/.ssh/authorized_keys

   - Test the ssh connection - ssh localhost

   - Exit the localhost session- exit

4. Disable ipv6 as hadoop is not supported for ipv6 networks

   sudo vi /etc/sysctl.conf

   - Add the following entries in the opened file,

   # disable ipv6

   net.ipv6.conf.all.disable_ipv6 = 1

   net.ipv6.conf.default.disable_ipv6 = 1

   net.ipv6.conf.lo.disable_ipv6 = 1

5. Install and configure hadoop

   - Download the hadoop tar file- curl -O --location http://ftp.heanet.ie/mirrors/www.apache.org/dist/hadoop/common/stable/hadoop-2.9.0.tar.gz

   - Change directory to /usr/local- cd /usr/local

   - Copy the downloaded files to the current path- sudo cp ~/Downloads/hadoop-2.9.0.tar.gz

   - Untar the hadoop file- sudo tar xzf hadoop-2.9.0.tar.gz

   - Create a symbolic as ‘hadoop’ to above directory- sudo ln –s hadoop-2.9.0 hadoop

   - Change the owner of the folder to hduser/hadoop- sudo chown –R hduser:hadoop hadoop-2.9.0

   - Change the JAVA_HOME in hadoop-env.sh under the path /usr/local/hadoop/etc/hadoop

- Copy the file mapred-site.xml.template to mapred-site.xml and add the below property,
mapreduce.jobtracker.address- local
- Add the below properties in hdfs-site.xml
  dfs.replication= 1
  dfs.datanode.data.dir =/home/hduser/hdfs
- Add the below properties in core-site.xml
  hadoop.tmp.dir = /home/hduser/tmp
  fs.defaultFS = hdfs://localhost:54310
- Create temporary directory and data directory for Hadoop and HDFS
  mkdir ~/tmp
  mkdir ~/hdfs
  chmod 750 ~/hdfs
- Format the HDFS namenode and start Hadoop
  cd /usr/local/hadoop
  bin/hdfs namenode -format
  sbin/start-dfs.sh
  sbin/start-yarn.sh jps

Setup HBASE-

- Download Hbase package- curl -O --location http://ftp.heanet.ie/mirrors/www.apache.org/dist/hbase/stable/hbase-1.2.6-bin.tar.gz
- Unpack the downloaded hbase to /usr/local path
- Create a symbolic lync 'hbase' to the above folder
- Change the permission of the folder to hduser:hadoop
- Edit the conf/hbase-site.xml to add the below property,
  hbase.rootdir = file:///usr/data/hbase
- Modify the java home path and LD_LIBRARY_PATH in conf/hbase.env.sh file
- Start Hbase process- /bin/hbase shell
- Connect to hbase shell and create table 'usertable' with coloumnfamily as 'cf1'
  Create 'usertable','cf1'

1.2 Steps for installing MySQL:

- Install the required packages – mysql-server, mysql-client, libmysql-java
- Set the password when prompted
- Create database 'BenchTest' and table 'usertable'
  mysql -uroot -p
  > create database BenchTest;
  > use BenchTest
  Exit the mysql session