HADOOP v3 / Centos 7 Virtual Box Installation

(Feel free to update)

Short version: <https://tecadmin.net/setup-hadoop-single-node-cluster-on-centos-redhat/>

Note: Use as guide only. The SABA tutorial is more thorough.

1. Ensure user account has sudo access
2. Check: sudo ls
3. Add to sudoers:
4. Login as root: su
5. Execute: usermod -aG wheel **username**
6. Update / Change Hostname

<https://www.tecmint.com/set-change-hostname-in-centos-7/>

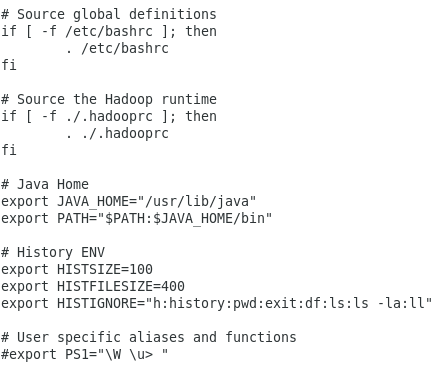
1. Install Java
2. Confirm if already installed  
   javac -version
3. Yum installation

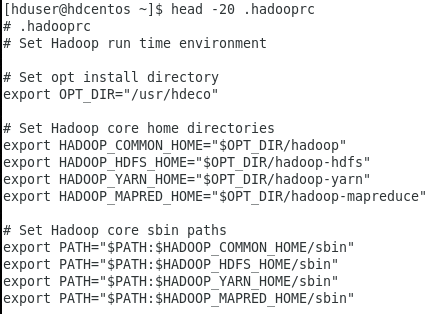
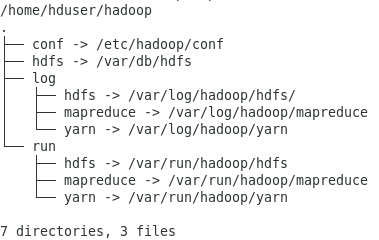
yum search java-1.8.0-openjdk

1. Set softlink same in .bashrc for JAVA\_HOME

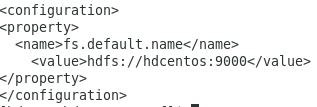
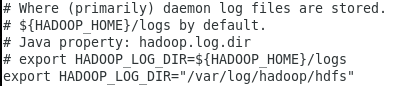


1. Modify .bashrc in home directory

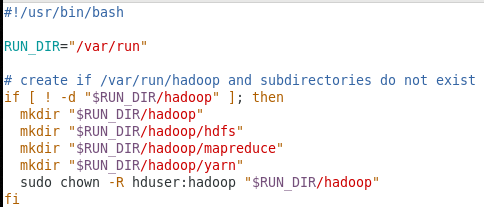


1. HADOOP Core
2. [BASIC]
3. Download repo:   
   **sudo curl -O** [**http://public-repo-1.hortonworks.com/HDP/centos7/3.x/updates/3.1.0.0/hdp.repo**](http://public-repo-1.hortonworks.com/HDP/centos7/3.x/updates/3.1.0.0/hdp.repo)
4. Move downloaded **hdp.repo** file to yum repository ( overwrite )  
   **mv /home/hduser/Downloads/hdp.repo /etc/yum.repos.d**
5. Install with yum:  
   **yum install hadoop hadoop-client**
6. Create **.hadooprc** for hadoop-core  
   
7. Create user-home’s hadoop tree below and necessary softlinks  
   
8. Locate **conf.empty** and copy hadoop-core files (hdfs, yarn, mapreduce) to **conf**
9. cd /usr/hdp
10. cd **`**find . -name conf.empty**`**; ls # Note the back-quote in red
11. cp **hdfs\*** **yarn\*** **mapred\*** ~/hadoop/conf/
12. cd ~/hadoop/conf; ls
13. Hdeco softlinks:

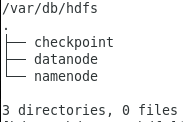


1. ~/hadoop/conf/core-site.xml  
   
2. ~/hadoop/conf/hadoop-env.sh  
   
3. Create the following directories:  
   /var/run/hadoop/hdfs  
   /var/run/hadoop/mapreduce  
   /var/run/hadoop/yarn  
   sudo chown -R /var/run/hadoop

**Note: /var/run/XXX** custom directories need to be re-created on shutdown / restart

**[Optional]**: Write a bash script that re-creates **/var/run/hadoop** and **sub-directories** and run as sudo (ex. sudo ./create\_rundir.sh )  


1. **HDFS** (Already installed in 3.1)
2. Hdeco: /usr/hdeco/hadoop-hdfs  
   
3. Conf: ~/hadoop/conf/hdfs-site.xml  
   
4. Hadoop hdfs tree: ~/hadoop/hdfs  
   
5. HDFS DB tree: /var/db/hdfs



1. Log: /var/log/hadoop/hdfs
2. Run: /var/run/hadoop/hdfs

* Re-run **mkdir** on run directory for every reboot

1. Add libexec to **/usr/hdeco/hadoop-hdfs** directory as softlink:



1. Format the hadoop file system for the very first time:  
   hdfs namenode -format
2. Start:  
   **hdfs --daemon start namenode**

**hdfs --daemon start datanode**

**hdfs --daemon start secondarynamenode**

1. Stop (reverse order):

**hdfs --daemon stop secondarynamenode**

**hdfs --daemon stop datanode**

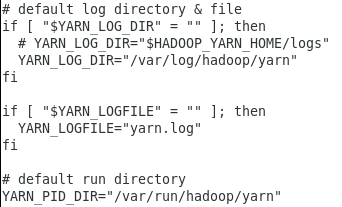
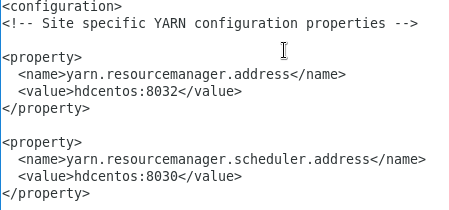
**hdfs --daemon stop namenode**

1. Check:

**jps**

or

**http://localhost:9870**

1. **YARN** (Already installed in 3.1)
2. Hdeco: /usr/hdeco/hadoop-yarn  
    
3. Conf:  
   ~/hadoop/conf/yarn-env.sh  
     
     
   ~/hadoop/conf/yarn-site.xml (follow SABA tutorial for complete conf)  
   
4. DB: N/A
5. Log: /var/log/hadoop/yarn
6. Run: /var/run/hadoop/yarn
7. Add libexec to **/usr/hdeco/hadoop-yarn** directory as softlink:



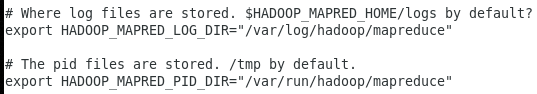
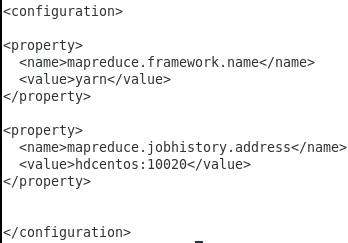
1. Start:

yarn --daemon start resourcemanager

yarn --daemon start nodemanager

1. Check for errors:

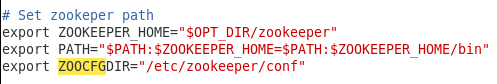
grep ERR /var/log/hadoop/yarn/\*/\*

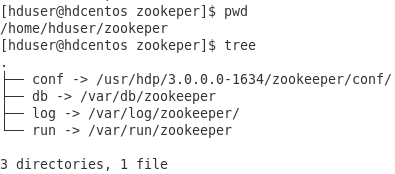
1. Stop: ( Reverse order of start )
2. WEB UI: hdcentos:8088
3. **MAPREDUCE** (Already installed in 3.1)
4. Hdeco: /usr/hdeco/hadoop-hdfs  
    
5. Conf:  
   ~/hadoop/conf/mapred-env.sh  
     
   ~/hadoop/conf/mapred-site.xml  
   
6. DB: N/A
7. Log : /var/log/hadoop/mapreduce
8. Run: /var/run/hadoop/mapreduce
9. Add libexec to **/usr/hdeco/hadoop-mapreduce** directory as softlink:



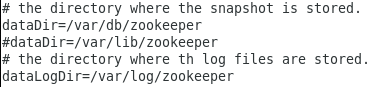
1. Start:

mr-jobhistory-daemon.sh start historyserver

1. ZOOKEEPER (Already installed in 3.1)
2. Update .hadooprc  
   
3. Dir:



1. Hdeco:  
   /usr/hdeco/zookeeper  
   
2. Etc conf:

/etc/zookeeper/conf/zoo.cfg  


/etc/zookeeper/conf/zookeeper-env.sh  


1. DB: /var/db/zookeeper
2. Log: /var/log/zookeeper
3. Run: /var/run/zookeeper
4. Start:

zkServer.sh start

1. Login and check:

zkCli.sh -server hdcentos:2181  
ls /

1. Stop:

zkServer.sh stop

1. HBASE (Already installed in 3.1)
2. Update .hadooprc



1. Dir:

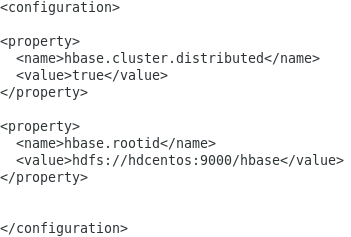


1. Hdeco:  
   /usr/hdeco/hbase



1. Conf:

/etc/hbase/conf  


/etc/hbase-site.xml  


/etc/hbase/regionservers



1. DB: /var/db/hbase
2. Log: /var/log/hbase
3. Run: /var/run/hbase
4. Start:

hbase-daemon start master

hbase-daemon start regionserver

1. Stop:

hbase-daemon stop regionserver

hbase-daemon stop master

1. MYSQL Installation

Note: Centos7 may have **MariaDB** installed by default. You may use MariaDB instead of MySQL. Optionally, MariaDB can be replaced by installing MySQL using the following instructions.

1. Remove MariaDB:  
   <https://stackoverflow.com/questions/33362904/completely-remove-mariadb-or-mysql-from-centos-7-or-rhel-7>
2. Install MySQL:

<https://www.linode.com/docs/databases/mysql/how-to-install-mysql-on-centos-7/>