## **Lab work №1**

## **Install Hadoop**

1.Use Ultravnc to find out the ip address our Virtual Machin.

2. Password for login: root/1qaz@WSX

2. Because Hadoop & HBase service ports are so dynamic, I recommend you install them on a Server in secure Private network and disable both SELinux and Firewalld.

sudo systemctl disable --now firewalld  
sudo setenforce 0  
sudo sed -i 's/^SELINUX=.\*/SELINUX=permissive/g' /etc/selinux/config  
cat /etc/selinux/config | grep SELINUX= | grep -v '#'

sudo yum -y install vim wget curl bash-completion

3. Install Java

Install Java if it is missing on your CentOS 7 server.

sudo yum -y install java-1.8.0-openjdk java-1.8.0-openjdk-devel

Validate is Java has been installed successfully.

$ **java -version**  
java version "1.8.0\_201"  
Java(TM) SE Runtime Environment (build 1.8.0\_201-b09)  
Java HotSpot(TM) 64-Bit Server VM (build 25.201-b09, mixed mode)

Set JAVA\_HOME variable.

cat <<EOF | sudo tee /etc/profile.d/hadoop\_java.sh  
export JAVA\_HOME=\$(dirname \$(dirname \$(readlink \$(readlink \$(which javac)))))  
export PATH=\$PATH:\$JAVA\_HOME/bin  
EOF

Update your $PATH and setting.

source /etc/profile.d/hadoop\_java.sh

Then test:

$ **echo $JAVA\_HOME**  
/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.201.b09-2.el7\_6.x86\_64

4. Create a User Account for Hadoop

Let’s create a separate user for Hadoop so we have isolation between the Hadoop file system and the Unix file system. Use for Hadoop user password : 1234

sudo adduser hadoop  
passwd hadoop  
sudo usermod -aG wheel hadoop

Once the user is added, generate SS key pair for the user.

$ **sudo su - hadoop**  
$ **ssh-keygen -t rsa**  
 Generating public/private rsa key pair.  
 Enter file in which to save the key (/home/hadoop/.ssh/id\_rsa):   
 Created directory '/home/hadoop/.ssh'.  
 Enter passphrase (empty for no passphrase):   
 Enter same passphrase again:   
 Your identification has been saved in /home/hadoop/.ssh/id\_rsa.  
 Your public key has been saved in /home/hadoop/.ssh/id\_rsa.pub.  
 The key fingerprint is:  
 SHA256:mA1b0nzdKcwv/LPktvlA5R9LyNe9UWt+z1z0AjzySt4 hadoop@hbase  
 The key's randomart image is:  
 +---[RSA 2048]----+  
 | |  
 | o + . . |  
 | o + . = o o|  
 | O . o.o.o=|  
 | + S . \*ooB=|  
 | o \*=.B|  
 | . . \*+=|  
 | o o o.O+|  
 | o E.=o=|  
 +----[SHA256]-----+

Add this user’s key to list of Authorized ssh keys.

cat ~/.ssh/id\_rsa.pub >> ~/.ssh/authorized\_keys  
chmod 0600 ~/.ssh/authorized\_keys

Verify that you can ssh using added key.

$ **ssh localhost**  
The authenticity of host 'localhost (::1)' can't be established.  
ECDSA key fingerprint is SHA256:WTqP642Xijk3xtTb/zt32o0Q7PqYlxzwX+H/B72z4P4.  
ECDSA key fingerprint is MD5:47:dc:17:78:63:f7:bc:12:72:70:4b:e3:2f:8a:c3:8d.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added 'localhost' (ECDSA) to the list of known hosts.  
Last login: Sun Apr 7 12:47:16 2019  
[hadoop@hbase ~]$

5. Download and Install Hadoop

Save the recent version to a variable.

Export RELEASE="3.2.1"

Then download Hadoop archive to your local system.

wget https://www-eu.apache.org/dist/hadoop/common/hadoop-$RELEASE/hadoop-$RELEASE.tar.gz

Extract the file.

tar -xzvf hadoop-$RELEASE.tar.gz

Move resulting directory to /usr/local/hadoop.

rm hadoop-$RELEASE.tar.gz  
sudo mv hadoop-$RELEASE/ /usr/local/hadoop

Set HADOOP\_HOME and add directory with Hadoop binaries to your $PATH.

cat <<EOF | sudo tee /etc/profile.d/hadoop\_java.sh  
export JAVA\_HOME=\$(dirname $(dirname $(readlink $(readlink $(which javac)))))  
export HADOOP\_HOME=/usr/local/hadoop  
export HADOOP\_HDFS\_HOME=\$HADOOP\_HOME  
export HADOOP\_MAPRED\_HOME=\$HADOOP\_HOME  
export YARN\_HOME=\$HADOOP\_HOME  
export HADOOP\_COMMON\_HOME=\$HADOOP\_HOME  
export HADOOP\_COMMON\_LIB\_NATIVE\_DIR=\$HADOOP\_HOME/lib/native  
export PATH=\$PATH:\$JAVA\_HOME/bin:\$HADOOP\_HOME/bin:\$HADOOP\_HOME/sbin  
EOF

Source file.

source /etc/profile.d/hadoop\_java.sh

Confirm your Hadoop version.

$ **hadoop version**

Hadoop 3.2.1

Complit