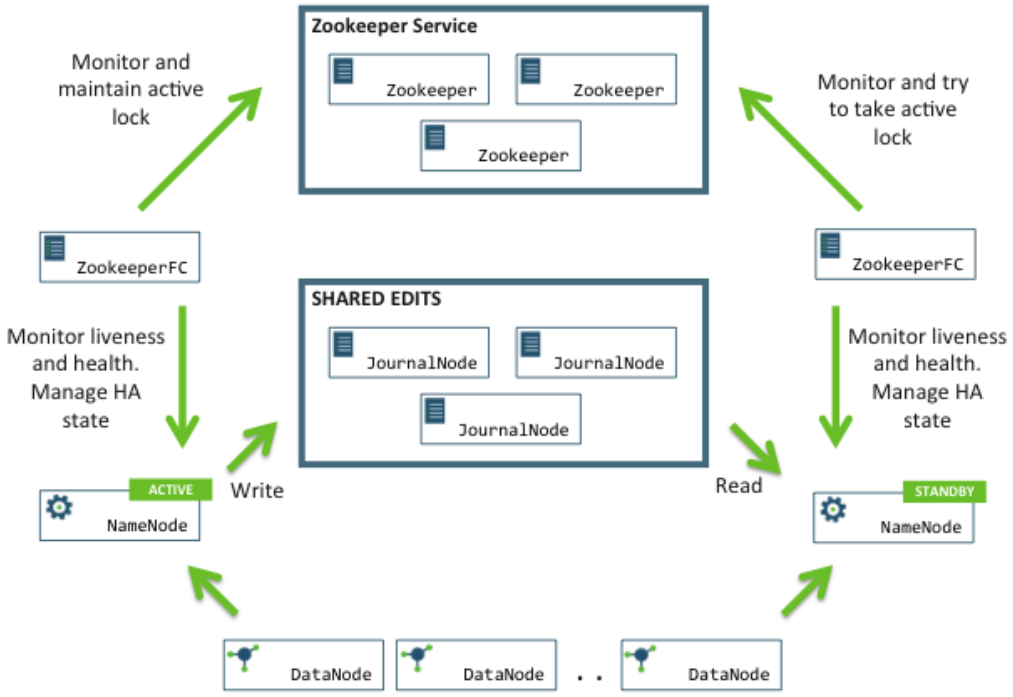
Namenode High-Availability

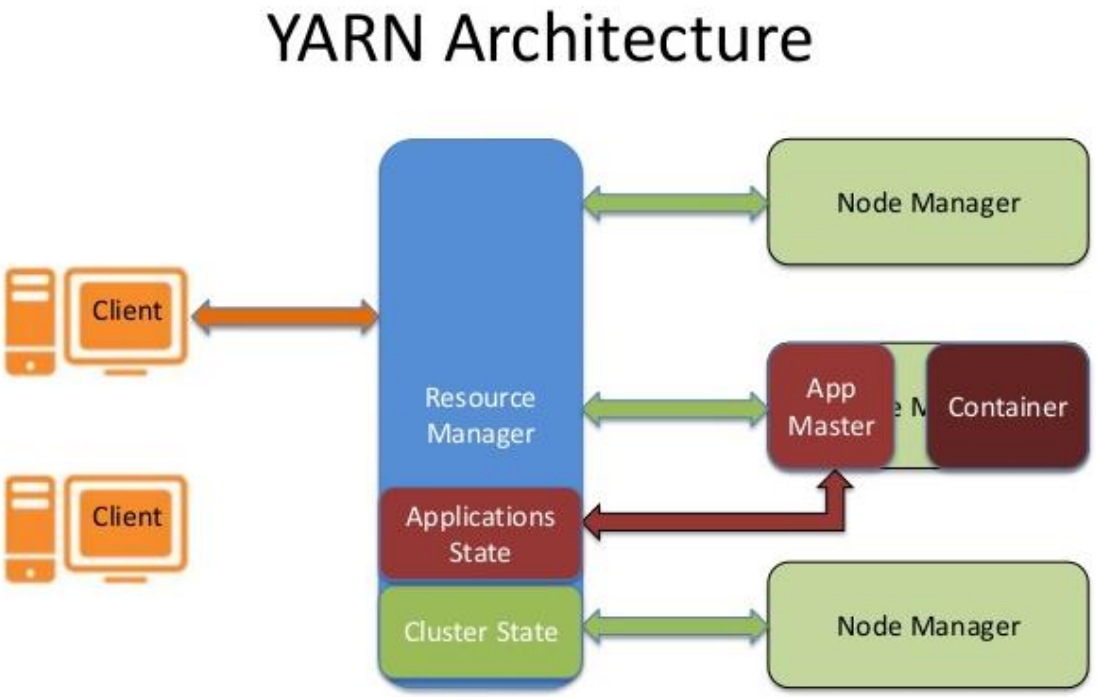
1. Two ways – Manual Failover and Automatic Failover
2. via Shared File System – NFS Server
   via Quorum Journal Manager – Journal Nodes (recommended)

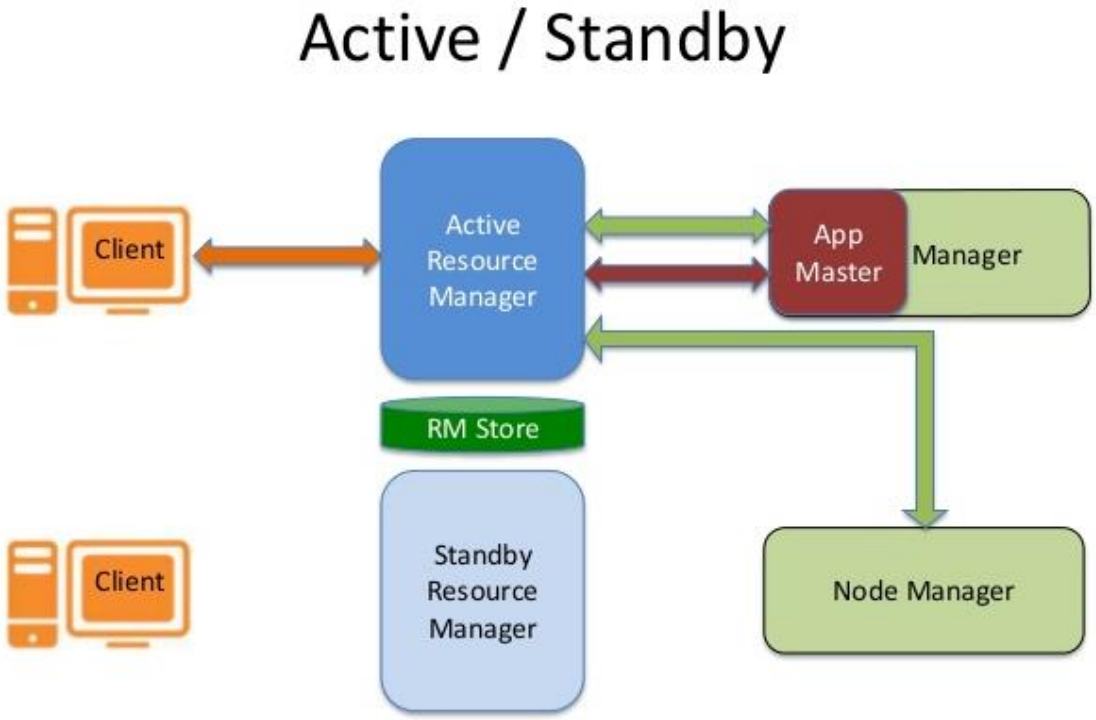
Architectural Changes in Hadoop version1 that have been made:

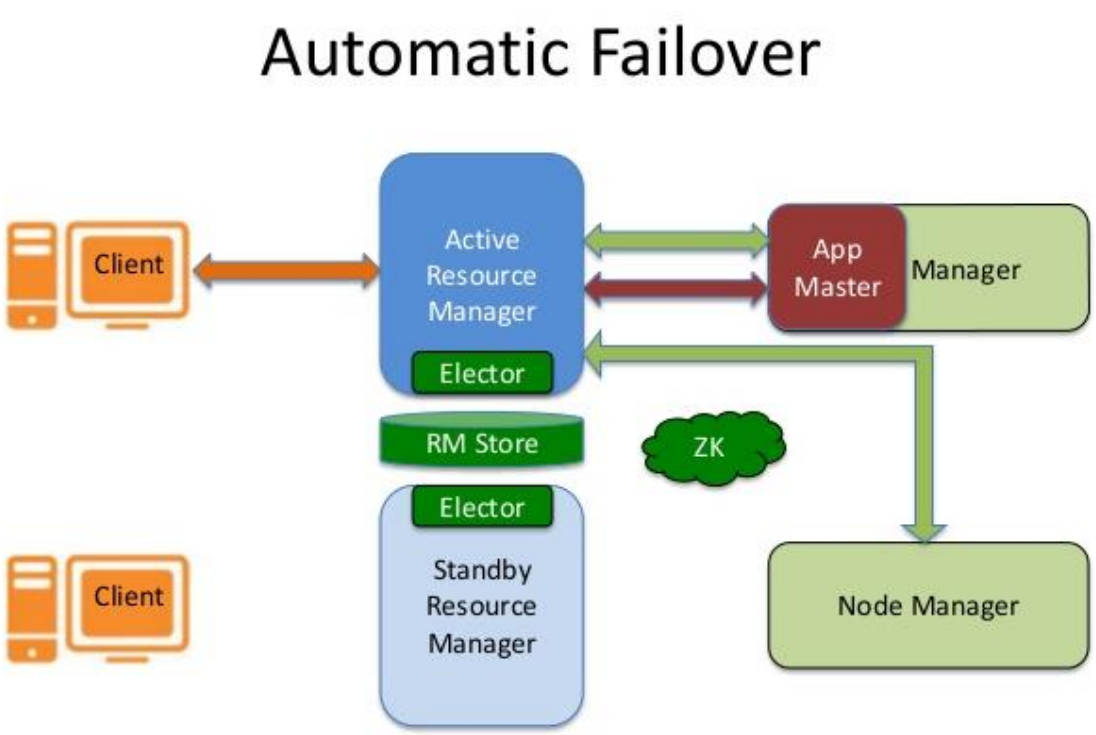
1. All the DNs are going to connect to both the Namenodes in the cluster.
2. All the DNs are going to send the block information to both the namenodes.
3. Edit logs which were there with the primary namenode are going to be shared with both the namenodes via the shared storage.
4. All the client objects should be aware of the internal carriers means lets say if the active NN goes down then client jobs which are talking to this cluster don't need to know about the changed address of the standby NN. This is internally taken care by Hadoop.
5. Secondary Namenode is not required in HA configuration because the standby node also performs the task of the SNN.



YARN – HA


YARN Architecture
Client
Client
Resource Manager
Applications State
Cluster State
Node Manager
App Master
Container
Node Manager


Active / Standby
Client
Client
Active Resource Manager
RM Store
Standby Resource Manager
App Master
Manager
Node Manager



5 Nodes:

Node	Hostname	IP Address	Roles
1	nn1.cluster.com	192.168.0.51	Namenode(Active), Resource Manager(Active), Zookeeper1, ZookeeperFailoverController, journalnode,historyserver
2	nn2.cluster.com	192.168.0.52	Namenode(Standby), Resource Manager(Standby), Zookeeper2, ZookeeperFailoverController, journalnode, historyserver
3	dn1.cluster.com	192.168.0.53	Datanode + NodeManager + Zookeeper3, journalnode
4	dn2.cluster.com	192.168.0.54	Datanode + NodeManager
5	dn3.cluster.com	192.168.0.55	Datanode + NodeManager

NN1 - Root:

```
[root@nn1 ~]# ll
total 346884
-rw-r--r-- 1 root root 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
-rw-r--r-- 1 root root 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
-rw-r--r-- 1 root root  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[root@nn1 ~]#
[root@nn1 ~]#
[root@nn1 ~]#
```

```
[root@nn1 ~]# cat /etc/hosts
192.168.0.51    nn1.cluster.com nn1
192.168.0.52    nn2.cluster.com nn2
192.168.0.53    dn1.cluster.com dn1

127.0.0.1   localhost localhost.localdomain localhost4 localhost4.localdomain4
::1         localhost localhost.localdomain localhost6 localhost6.localdomain6
[root@nn1 ~]#
```

```
[root@nn1 ~]# groupadd hadoop
[root@nn1 ~]# useradd -g hadoop hadoop
[root@nn1 ~]# passwd hadoop
Changing password for user hadoop.
New password:
BAD PASSWORD: it is WAY too short
BAD PASSWORD: is a palindrome
Retype new password:
passwd: all authentication tokens updated successfully.
[root@nn1 ~]# mv * /home/hadoop/
[root@nn1 ~]#
[root@nn1 ~]#
[root@nn1 ~]# ll /home/hadoop/
total 346884
-rw-r--r-- 1 root root 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
-rw-r--r-- 1 root root 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
-rw-r--r-- 1 root root  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[root@nn1 ~]#
[root@nn1 ~]# chown -R hadoop:hadoop /home/hadoop/*
[root@nn1 ~]#
[root@nn1 ~]# ll /home/hadoop/
total 346884
-rw-r--r-- 1 hadoop hadoop 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
-rw-r--r-- 1 hadoop hadoop 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
-rw-r--r-- 1 hadoop hadoop  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[root@nn1 ~]#
[root@nn1 ~]# su - hadoop
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ll
total 346884
-rw-r--r-- 1 hadoop hadoop 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
-rw-r--r-- 1 hadoop hadoop 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
-rw-r--r-- 1 hadoop hadoop  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[hadoop@nn1 ~]$
```

```
[root@nn1 ~]# groupadd hadoop
[root@nn1 ~]# useradd -g hadoop hadoop
[root@nn1 ~]# passwd hadoop
Changing password for user hadoop.
New password:
BAD PASSWORD: it is WAY too short
BAD PASSWORD: is a palindrome
Retype new password:
passwd: all authentication tokens updated successfully.
[root@nn1 ~]# mv * /home/hadoop/
[root@nn1 ~]#
[root@nn1 ~]#
[root@nn1 ~]# ll /home/hadoop/
total 346884
-rw-r--r-- 1 root root 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
-rw-r--r-- 1 root root 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
-rw-r--r-- 1 root root  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[root@nn1 ~]#
[root@nn1 ~]# chown -R hadoop:hadoop /home/hadoop/*
[root@nn1 ~]#
[root@nn1 ~]# ll /home/hadoop/
total 346884
-rw-r--r-- 1 hadoop hadoop 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
-rw-r--r-- 1 hadoop hadoop 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
-rw-r--r-- 1 hadoop hadoop  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[root@nn1 ~]#
[root@nn1 ~]# su - hadoop
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ll
total 346884
-rw-r--r-- 1 hadoop hadoop 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
-rw-r--r-- 1 hadoop hadoop 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
-rw-r--r-- 1 hadoop hadoop  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[hadoop@nn1 ~]$
```

Extract all the files:

[hadoop@nn1 ~]$ tar zxvf hadoop-2.6.0.tar.gz

[hadoop@nn1 ~]$ tar zxvf jdk-7u75-linux-x64.tar.gz

[hadoop@nn1 ~]$ tar zxvf zookeeper-3.4.6.tar.gz

```
[hadoop@nn1 ~]$ ll
total 346896
drwxr-xr-x  9 hadoop hadoop      4096 Nov 14  2014 hadoop-2.6.0
-rw-r--r--  1 hadoop hadoop 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
drwxr-xr-x  8 hadoop hadoop      4096 Dec 19  2014 jdk1.7.0_75
-rw-r--r--  1 hadoop hadoop 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
drwxr-xr-x 10 hadoop hadoop      4096 Feb 20  2014 zookeeper-3.4.6
-rw-r--r--  1 hadoop hadoop  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[hadoop@nn1 ~]$
```

[hadoop@nn1 ~]$ ln -s zookeeper-3.4.6 zookeeper
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ln -s hadoop-2.6.0 hadoop
[hadoop@nn1 ~]$

```
[hadoop@nn1 ~]$ ln -s jdk1.7.0_75 jdk
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ll
total 346896
lrwxrwxrwx  1 hadoop hadoop        12 Aug  9 15:59 hadoop -> hadoop-2.6.0
drwxr-xr-x  9 hadoop hadoop      4096 Nov 14  2014 hadoop-2.6.0
-rw-r--r--  1 hadoop hadoop 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
lrwxrwxrwx  1 hadoop hadoop        11 Aug  9 15:59 jdk -> jdk1.7.0_75
drwxr-xr-x  8 hadoop hadoop      4096 Dec 19  2014 jdk1.7.0_75
-rw-r--r--  1 hadoop hadoop 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
lrwxrwxrwx  1 hadoop hadoop        15 Aug  9 15:59 zookeeper -> zookeeper-3.4.6
drwxr-xr-x 10 hadoop hadoop      4096 Feb 20  2014 zookeeper-3.4.6
-rw-r--r--  1 hadoop hadoop  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[hadoop@nn1 ~]$
```

```
[hadoop@nn1 ~]$ ln -s zookeeper-3.4.6 zookeeper
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ln -s hadoop-2.6.0 hadoop
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ln -s jdk1.7.0_75 jdk
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ll
total 346896
lrwxrwxrwx  1 hadoop hadoop        12 Aug  9 15:59 hadoop -> hadoop-2.6.0
drwxr-xr-x  9 hadoop hadoop      4096 Nov 14  2014 hadoop-2.6.0
-rw-r--r--  1 hadoop hadoop 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
lrwxrwxrwx  1 hadoop hadoop        11 Aug  9 15:59 jdk -> jdk1.7.0_75
drwxr-xr-x  8 hadoop hadoop      4096 Dec 19  2014 jdk1.7.0_75
-rw-r--r--  1 hadoop hadoop 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
lrwxrwxrwx  1 hadoop hadoop        15 Aug  9 15:59 zookeeper -> zookeeper-3.4.6
drwxr-xr-x 10 hadoop hadoop      4096 Feb 20  2014 zookeeper-3.4.6
-rw-r--r--  1 hadoop hadoop  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[hadoop@nn1 ~]$
```

[hadoop@nn1 ~]$ vim .bash_profile

HADOOP_HOME=/home/hadoop/hadoop
JAVA_HOME=/home/hadoop/jdk
ZOOKEEPER_HOME=/home/hadoop/zookeeper

PATH=$PATH:$HOME/bin:$HADOOP_HOME:$HADOOP_HOME/bin:$HADOOP_HOME/sbin:$JAVA_HOME:$JAVA_HOME/bin:$ZOOKEEPER_HOME:$ZOOKEEPER_HOME/bin

export PATH
~

```
# User specific environment and startup programs

HADOOP_HOME=/home/hadoop/hadoop
JAVA_HOME=/home/hadoop/jdk
ZOOKEEPER_HOME=/home/hadoop/zookeeper

PATH=$PATH:$HOME/bin:$HADOOP_HOME:$HADOOP_HOME/bin:$HADOOP_HOME/sbin:$JAVA_HOME:$JAVA_HOME/bin:$ZOOKEEPER_HOME:$ZOOKEEPER_HOME/bin

export PATH
~
~
~
~
```

[hadoop@nn1 ~]$ source .bash_profile

```
[hadoop@nn1 ~]$ ssh-keygen
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:
ee:5c:9f:d6:a6:ad:f5:6d:f6:8f:db:41:aa:26:3f:f6 hadoop@nn1.cluster.com
The key's randomart image is:
+--[ RSA 2048]----+
|                 |
|                 |
|                 |
|                 |
|        S      . |
|       .      o  |
|        . .  o.. |
|       o o =o+o+=|
|        o =+BE++O|
+-----------------+
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ssh-copy-id -i .ssh/id_rsa.pub 192.168.0.51
The authenticity of host '192.168.0.51 (192.168.0.51)' can't be established.
RSA key fingerprint is b1:b3:d8:e3:e2:36:75:ae:6a:8b:0a:ce:85:7b:ce:2f.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.0.51' (RSA) to the list of known hosts.
hadoop@192.168.0.51's password:
Now try logging into the machine, with "ssh '192.168.0.51'", and check in:

  .ssh/authorized_keys

to make sure we haven't added extra keys that you weren't expecting.

[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ssh 192.168.0.51
[hadoop@nn1 ~]$ logout
Connection to 192.168.0.51 closed.
[hadoop@nn1 ~]$
```

```
[hadoop@nn1 ~]$ ssh-keygen
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:
ee:5c:9f:d6:a6:ad:f5:6d:f6:8f:db:41:aa:26:3f:f6 hadoop@nn1.cluster.com
The key's randomart image is:
+--[ RSA 2048]----+
|                 |
|                 |
|                 |
|                 |
|        S      . |
|       .      o  |
|        . .  o.. |
|       o o =o+o+=|
|        o =+BE++O|
+-----------------+
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ssh-copy-id -i .ssh/id_rsa.pub 192.168.0.51
The authenticity of host '192.168.0.51 (192.168.0.51)' can't be established.
RSA key fingerprint is b1:b3:d8:e3:e2:36:75:ae:6a:8b:0a:ce:85:7b:ce:2f.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.0.51' (RSA) to the list of known hosts.
hadoop@192.168.0.51's password:
Now try logging into the machine, with "ssh '192.168.0.51'", and check in:

  .ssh/authorized_keys

to make sure we haven't added extra keys that you weren't expecting.

[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ssh 192.168.0.51
[hadoop@nn1 ~]$ logout
Connection to 192.168.0.51 closed.
[hadoop@nn1 ~]$
```

Change the permissions of files in .ssh folder

```
[hadoop@nn1 ~]$ ll -a
total 346924
drwx------   6 hadoop hadoop      4096 Aug  9 16:03 .
drwxr-xr-x.  3 root   root        4096 Aug  9 15:57 ..
-rw-r--r--   1 hadoop hadoop        18 Dec  2  2011 .bash_logout
-rw-r--r--   1 hadoop hadoop       384 Aug  9 16:02 .bash_profile
-rw-r--r--   1 hadoop hadoop       124 Dec  2  2011 .bashrc
lrwxrwxrwx   1 hadoop hadoop        12 Aug  9 15:59 hadoop -> hadoop-2.6.0
drwxr-xr-x   9 hadoop hadoop      4096 Nov 14  2014 hadoop-2.6.0
-rw-r--r--   1 hadoop hadoop 195257604 May 12 21:04 hadoop-2.6.0.tar.gz
lrwxrwxrwx   1 hadoop hadoop        11 Aug  9 15:59 jdk -> jdk1.7.0_75
drwxr-xr-x   8 hadoop hadoop      4096 Dec 19  2014 jdk1.7.0_75
-rw-r--r--   1 hadoop hadoop 142245547 May 12 21:04 jdk-7u75-linux-x64.tar.gz
drwx------   2 hadoop hadoop      4096 Aug  9 16:03 .ssh
-rw-------   1 hadoop hadoop       952 Aug  9 16:03 .viminfo
lrwxrwxrwx   1 hadoop hadoop        15 Aug  9 15:59 zookeeper -> zookeeper-3.4.6
drwxr-xr-x  10 hadoop hadoop      4096 Feb 20  2014 zookeeper-3.4.6
-rw-r--r--   1 hadoop hadoop  17699306 Nov  6  2014 zookeeper-3.4.6.tar.gz
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ll -a .ssh/
total 24
drwx------ 2 hadoop hadoop 4096 Aug  9 16:03 .
drwx------ 6 hadoop hadoop 4096 Aug  9 16:03 ..
-rw------- 1 hadoop hadoop  404 Aug  9 16:03 authorized_keys
```

```
-rw------- 1 hadoop hadoop 1675 Aug  9 16:03 id_rsa
-rw-r--r-- 1 hadoop hadoop  404 Aug  9 16:03 id_rsa.pub
-rw-r--r-- 1 hadoop hadoop  394 Aug  9 16:03 known_hosts
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ chmod 600 .ssh/*
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ll -a .ssh/
total 24
drwx------ 2 hadoop hadoop 4096 Aug  9 16:03 .
drwx------ 6 hadoop hadoop 4096 Aug  9 16:03 ..
-rw------- 1 hadoop hadoop  404 Aug  9 16:03 authorized_keys
-rw------- 1 hadoop hadoop 1675 Aug  9 16:03 id_rsa
-rw------- 1 hadoop hadoop  404 Aug  9 16:03 id_rsa.pub
-rw------- 1 hadoop hadoop  394 Aug  9 16:03 known_hosts
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
```

```
[hadoop@nn1 ~]$ vim hadoop/etc/hadoop/hadoop-env.sh

JAVA_HOME=/home/hadoop/jdk
```

```
[hadoop@nn1 ~]$ vim hadoop/etc/hadoop/core-site.xml
```

```
<property>
<name>fs.defaultFS</name>
<value>hdfs://ha-cluster</value>
</property>

<property>
<name>dfs.journalnode.edits.dir</name>
<value>/home/hadoop/data/jn</value>
</property>
```

```
<configuration>

<property>
<name>fs.defaultFS</name>
<value>hdfs://ha-cluster</value>
</property>

<property>
<name>dfs.journalnode.edits.dir</name>
<value>/home/hadoop/data/jn</value>
</property>



</configuration>
~
~
```

[hadoop@nn1 ~]$ vim hadoop/etc/hadoop/hdfs-site.xml

<configuration>

<property>
<name>dfs.namenode.name.dir</name>
<value>/home/hadoop/data/nn</value>
</property>

<property>
<name>dfs.datanode.data.dir</name>
<value>/home/hadoop/data/dn</value>
</property>

<property>
<name>dfs.nameservices</name>
<value>ha-cluster</value>
</property>

<property>
<name>dfs.ha.namenodes.ha-cluster</name>
<value>nn1,nn2</value>
</property>

<property>
<name>dfs.namenode.rpc-address.ha-cluster.nn1</name>
<value>192.168.0.51:8020</value>
</property>

<property>
<name>dfs.namenode.rpc-address.ha-cluster.nn2</name>
<value>192.168.0.52:8020</value>
</property>

```
<configuration>

<property>
<name>dfs.namenode.name.dir</name>
<value>/home/hadoop/data/nn</value>
</property>

<property>
<name>dfs.datanode.data.dir</name>
<value>/home/hadoop/data/dn</value>
</property>

<property>
<name>dfs.nameservices</name>
<value>ha-cluster</value>
</property>

<property>
<name>dfs.ha.namenodes.ha-cluster</name>
<value>nn1,nn2</value>
</property>

<property>
<name>dfs.namenode.rpc-address.ha-cluster.nn1</name>
<value>192.168.0.51:8020</value>
</property>

<property>
<name>dfs.namenode.rpc-address.ha-cluster.nn2</name>
<value>192.168.0.52:8020</value>
</property>



<property>
<name>dfs.namenode.http-address.ha-cluster.nn1</name>
<value>192.168.0.51:50070</value>
</property>

<property>
<name>dfs.namenode.http-address.ha-cluster.nn2</name>
<value>192.168.0.52:50070</value>
</property>

<property>
<name>dfs.namenode.shared.edits.dir</name>
<value>qjournal://192.168.0.51:8485;192.168.0.52:8485;192.168.0.53:8485/ha-cluster</value>
</property>

<property>
<name>dfs.client.failover.proxy.provider.ha-cluster</name>
<value>org.apache.hadoop.hdfs.server.namenode.ha.ConfiguredFailoverProxyProvider</value>
</property>
```

```
<property>
<name>dfs.namenode.http-address.ha-cluster.nn1</name>
<value>192.168.0.51:50070</value>
</property>

<property>
<name>dfs.namenode.http-address.ha-cluster.nn2</name>
<value>192.168.0.52:50070</value>
</property>

<property>
<name>dfs.namenode.shared.edits.dir</name>
<value>qjournal://192.168.0.51:8485;192.168.0.52:8485;192.168.0.53:8485/ha-cluster</value>
</property>

<property>
<name>dfs.client.failover.proxy.provider.ha-cluster</name>
<value>org.apache.hadoop.hdfs.server.namenode.ha.ConfiguredFailoverProxyProvidern</value>
</property>
```

```
<property>
<name>dfs.ha.automatic-failover.enabled</name>
<value>true</value>
</property>

<property>
<name>ha.zookeeper.quorum</name>
<value>192.168.0.51:2181,192.168.0.52:2181,192.168.0.53:2181</value>
</property>

<property>
<name>dfs.ha.fencing.methods</name>
<value>sshfence</value>
</property>

<property>
<name>dfs.ha.fencing.ssh.private-key-files</name>
<value>/home/hadoop/.ssh/id_rsa</value>
</property>
```

```
<property>
<name>dfs.client.failover.proxy.provider.ha-cluster</name>
<value>org.apache.hadoop.hdfs.server.namenode.ha.ConfiguredFailoverProxyProvider</value>
</property>

<property>
<name>dfs.ha.automatic-failover.enabled</name>
<value>true</value>
</property>

<property>
<name>ha.zookeeper.quorum</name>
<value>192.168.0.51:2181,192.168.0.52:2181,192.168.0.53:2181</value>
</property>

<property>
<name>dfs.ha.fencing.methods</name>
<value>sshfence</value>
</property>

<property>
<name>dfs.ha.fencing.ssh.private-key-files</name>
<value>/home/hadoop/.ssh/id_rsa</value>
</property>
```

```
[hadoop@nn1 ~]$ vim hadoop/etc/hadoop/slaves
```

192.168.0.53

[hadoop@nn1 ~]$ cp -v zookeeper/conf/zoo_sample.cfg zookeeper/conf/zoo.cfg
`zookeeper/conf/zoo_sample.cfg' -> `zookeeper/conf/zoo.cfg'
[hadoop@nn1 ~]$

[hadoop@nn1 ~]$ vim zookeeper/conf/zoo.cfg

dataDir=/home/hadoop/data/zookeeper

server.1=192.168.0.51:2888:3888
server.2=192.168.0.52:2888:3888
server.3=192.168.0.53:2888:3888

```
# The number of milliseconds of each tick
tickTime=2000
# The number of ticks that the initial
# synchronization phase can take
initLimit=10
# The number of ticks that can pass between
# sending a request and getting an acknowledgement
syncLimit=5
# the directory where the snapshot is stored.
# do not use /tmp for storage, /tmp here is just
# example sakes.
dataDir=/home/hadoop/data/zookeeper
# the port at which the clients will connect
clientPort=2181
# the maximum number of client connections.
# increase this if you need to handle more clients
#maxClientCnxns=60
#
# Be sure to read the maintenance section of the
# administrator guide before turning on autopurge.
#
# http://zookeeper.apache.org/doc/current/zookeeperAdmin.html#sc_maintenance
#
# The number of snapshots to retain in dataDir
#autopurge.snapRetainCount=3
# Purge task interval in hours
# Set to "0" to disable auto purge feature
#autopurge.purgeInterval=1

server.1=192.168.0.51:2888:3888
server.2=192.168.0.52:2888:3888
server.3=192.168.0.53:2888:3888
~
```

[hadoop@nn1 ~]$ mkdir -p data/zookeeper
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ touch data/zookeeper/myid
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ll data/zookeeper/myid
-rw-rw-r-- 1 hadoop hadoop 0 Aug 9 16:20 data/zookeeper/myid
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ vim data/zookeeper/myid

```
[hadoop@nn1 ~]$ mkdir -p data/zookeeper
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ touch data/zookeeper/myid
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ll data/zookeeper/myid
-rw-rw-r-- 1 hadoop hadoop 0 Aug  9 16:20 data/zookeeper/myid
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ vim data/zookeeper/myid
```

```
[hadoop@nn1 ~]$ cat data/zookeeper/myid
1
[hadoop@nn1 ~]$
```

######################RM HA CONFIGURATIONS#################################

Edit mapred-site.xml = on 51

```
[hadoop@nn1 ~]$ cp -v hadoop/etc/hadoop/mapred-site.xml.template hadoop/etc/hadoop/mapred-site.xml
`hadoop/etc/hadoop/mapred-site.xml.template' -> `hadoop/etc/hadoop/mapred-site.xml'
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$

[hadoop@nn1 ~]$ vim hadoop/etc/hadoop/mapred-site.xml
```

```
<property>
<name>mapreduce.framework.name</name>
<value>yarn</value>
</property>
```

RM CONFIGURATIONS

```
<property>
<name>yarn.resourcemanager.cluster-id</name>
<value>ha-cluster</value>
</property>

<property>
<name>yarn.resourcemanager.ha.enabled</name>
<value>true</value>
</property>

<property>
<name>yarn.client.failover-proxy-provider</name>
<value>org.apache.hadoop.yarn.client.ConfiguredRMFailoverProxyProvider</value>
</property>

<property>
<name>yarn.resourcemanager.store.class</name>
<value>org.apache.hadoop.yarn.server.resourcemanager.recovery.ZKRMStateStore</value>
</property>
```

```
<property>
<name>yarn.resourcemanager.recovery.enabled</name>
<value>true</value>
</property>

<property>
<name>yarn.resourcemanager.hostname.rm1</name>
<value>192.168.0.51</value>
</property>

<property>
<name>yarn.resourcemanager.hostname.rm2</name>
<value>192.168.0.52</value>
</property>

<property>
<name>yarn.resourcemanager.ha.rm-ids</name>
<value>rm1,rm2</value>
</property>

<property>
<name>yarn.resourcemanager.webapp.address.rm1</name>
<value>192.168.0.51:9026</value>
</property>

<property>
<name>yarn.resourcemanager.webapp.address.rm2</name>
<value>192.168.0.52:9026</value>
</property>

<property>
<name>yarn.resourcemanager.zk-address</name>
<value>192.168.0.51:2181,192.168.0.52:2181,192.168.0.53:2181</value>
<description>For multiple zk services, separate them with comma</description>
</property>

<property>
<name>yarn.nodemanager.aux-services</name>
<value>mapreduce_shuffle</value>
</property>

<property>
<name>yarn.nodemanager.aux-services.mapreduce.shuffle.class</name>
<value>org.apache.hadoop.mapred.ShuffleHandler</value>
</property>
```

ON 51

```
[hadoop@nn1 ~]$ for i in {1..3}; do ssh 192.168.0.5$i "hostname;jdk/bin/jps;echo -e '\n'";done
nn1.cluster.com
1433 Jps
```

```
nn2.cluster.com
1399 Jps


dn1.cluster.com
1386 Jps


[hadoop@nn1 ~]$
```

In Namenode 2

```
[hadoop@nn2 ~]$ vim data/zookeeper/myid
[hadoop@nn2 ~]$ cat data/zookeeper/myid
2
[hadoop@nn2 ~]$
```

In Datanode1:

```
[hadoop@dn1 ~]$ vim data/zookeeper/myid
[hadoop@dn1 ~]$ cat data/zookeeper/myid
3
[hadoop@dn1 ~]$
```

Start the daemons:

```
[hadoop@nn1 ~]$ hadoop-daemon.sh start journalnode
starting journalnode, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-journalnode-nn1.cluster.com.out
[hadoop@nn1 ~]$ ssh nn2
Last login: Sun Aug  9 16:40:23 2015 from 192.168.0.51
[hadoop@nn2 ~]$ hadoop-daemon.sh start journalnode
starting journalnode, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-journalnode-nn2.cluster.com.out
[hadoop@nn2 ~]$ ssh dn1
Last login: Sun Aug  9 16:40:56 2015 from 192.168.0.52
[hadoop@dn1 ~]$ hadoop-daemon.sh start journalnode
starting journalnode, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-journalnode-dn1.cluster.com.out
[hadoop@dn1 ~]$ logout
Connection to dn1 closed.
[hadoop@nn2 ~]$ logout
Connection to nn2 closed.
[hadoop@nn1 ~]$ for i in {1..3}; do ssh 192.168.0.5$i "hostname;jdk/bin/jps;echo -e '\n'";done
nn1.cluster.com
1484 JournalNode
1543 Jps


nn2.cluster.com
```

1544 Jps
1486 JournalNode

dn1.cluster.com
1472 JournalNode
1529 Jps

[hadoop@nn1 ~]$

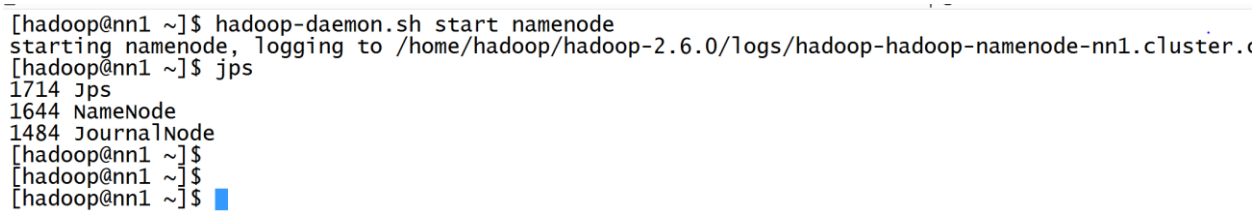
```
[hadoop@nn1 ~]$ hadoop-daemon.sh start journalnode
starting journalnode, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-journalnode-nn1.cluster.com.out
[hadoop@nn1 ~]$ ssh nn2
Last login: Sun Aug  9 16:40:23 2015 from 192.168.0.51
[hadoop@nn2 ~]$ hadoop-daemon.sh start journalnode
starting journalnode, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-journalnode-nn2.cluster.com.out
[hadoop@nn2 ~]$ ssh dn1
Last login: Sun Aug  9 16:40:56 2015 from 192.168.0.52
[hadoop@dn1 ~]$ hadoop-daemon.sh start journalnode
starting journalnode, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-journalnode-dn1.cluster.com.out
[hadoop@dn1 ~]$ logout
Connection to dn1 closed.
[hadoop@nn2 ~]$ logout
Connection to nn2 closed.
[hadoop@nn1 ~]$ for i in {1..3}; do ssh 192.168.0.5$i "hostname;jdk/bin/jps;echo -e '\n'";done
nn1.cluster.com
1484 JournalNode
1543 Jps


nn2.cluster.com
1544 Jps
1486 JournalNode


dn1.cluster.com
1472 JournalNode
1529 Jps


[hadoop@nn1 ~]$
```

On Namenode1:

[hadoop@nn1 ~]$ hdfs namenode -format

```
15/08/09 16:44:56 INFO blockmanagement.BlockManager: encryptDataTransfer        = false
15/08/09 16:44:56 INFO blockmanagement.BlockManager: maxNumBlocksToLog          = 1000
15/08/09 16:44:56 INFO namenode.FSNamesystem: fsOwner             = hadoop (auth:SIMPLE)
15/08/09 16:44:56 INFO namenode.FSNamesystem: supergroup          = supergroup
15/08/09 16:44:56 INFO namenode.FSNamesystem: isPermissionEnabled = true
15/08/09 16:44:56 INFO namenode.FSNamesystem: Determined nameservice ID: ha-cluster
15/08/09 16:44:56 INFO namenode.FSNamesystem: HA Enabled: true
15/08/09 16:44:56 INFO namenode.FSNamesystem: Append Enabled: true
15/08/09 16:44:57 INFO util.GSet: Computing capacity for map INodeMap
15/08/09 16:44:57 INFO util.GSet: VM type       = 64-bit
15/08/09 16:44:57 INFO util.GSet: 1.0% max memory 966.7 MB = 9.7 MB
15/08/09 16:44:57 INFO util.GSet: capacity      = 2^20 = 1048576 entries
15/08/09 16:44:57 INFO namenode.NameNode: Caching file names occuring more than 10 times
15/08/09 16:44:57 INFO util.GSet: Computing capacity for map cachedBlocks
15/08/09 16:44:57 INFO util.GSet: VM type       = 64-bit
15/08/09 16:44:57 INFO util.GSet: 0.25% max memory 966.7 MB = 2.4 MB
15/08/09 16:44:57 INFO util.GSet: capacity      = 2^18 = 262144 entries
15/08/09 16:44:57 INFO namenode.FSNamesystem: dfs.namenode.safemode.threshold-pct = 0.9990000128746033
15/08/09 16:44:57 INFO namenode.FSNamesystem: dfs.namenode.safemode.min.datanodes = 0
15/08/09 16:44:57 INFO namenode.FSNamesystem: dfs.namenode.safemode.extension     = 30000
15/08/09 16:44:57 INFO namenode.FSNamesystem: Retry cache on namenode is enabled
15/08/09 16:44:57 INFO namenode.FSNamesystem: Retry cache will use 0.03 of total heap and retry cache entry expi
15/08/09 16:44:57 INFO util.GSet: Computing capacity for map NameNodeRetryCache
15/08/09 16:44:57 INFO util.GSet: VM type       = 64-bit
15/08/09 16:44:57 INFO util.GSet: 0.029999999329447746% max memory 966.7 MB = 297.0 KB
15/08/09 16:44:57 INFO util.GSet: capacity      = 2^15 = 32768 entries
15/08/09 16:44:57 INFO namenode.NNConf: ACLs enabled? false
15/08/09 16:44:57 INFO namenode.NNConf: XAttrs enabled? true
15/08/09 16:44:57 INFO namenode.NNConf: Maximum size of an xattr: 16384
15/08/09 16:44:59 INFO namenode.FSImage: Allocated new BlockPoolId: BP-1244531934-192.168.0.51-1439118899139
15/08/09 16:44:59 INFO common.Storage: Storage directory /home/hadoop/data/nn has been successfully formatted.
15/08/09 16:44:59 INFO namenode.NNStorageRetentionManager: Going to retain 1 images with txid >= 0
15/08/09 16:44:59 INFO util.ExitUtil: Exiting with status 0
15/08/09 16:44:59 INFO namenode.NameNode: SHUTDOWN_MSG:
/************************************************************
SHUTDOWN_MSG: Shutting down NameNode at nn1.cluster.com/192.168.0.51
************************************************************/
[hadoop@nn1 ~]$
```

[hadoop@nn1 ~]$ hadoop-daemon.sh start namenode
starting namenode, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-namenode-nn1.cluster.com.out
[hadoop@nn1 ~]$ jps
1714 Jps
1644 NameNode
1484 JournalNode
[hadoop@nn1 ~]$



On namenode 2:

[hadoop@nn1 ~]$ ssh nn2
Last login: Sun Aug 9 16:41:53 2015 from 192.168.0.51
[hadoop@nn2 ~]$
[hadoop@nn2 ~]$ hdfs namenode -bootstrapStandby

===
About to bootstrap Standby ID nn2 from:
           Nameservice ID: ha-cluster
        Other Namenode ID: nn1
  Other NN's HTTP address: http://192.168.0.51:50070
  Other NN's IPC address: nn1.cluster.com/192.168.0.51:8020
             Namespace ID: 682278749
           Block pool ID: BP-1244531934-192.168.0.51-1439118899139
              Cluster ID: CID-96aa1e31-2ab9-4af5-87b2-0e20d1910ca7
          Layout version: -60
===

```
 2014-11-13T21:10Z
STARTUP_MSG:   java = 1.7.0_75
************************************************************/
15/08/09 16:48:44 INFO namenode.NameNode: registered UNIX signal handlers for [TERM, HUP, INT]
15/08/09 16:48:44 INFO namenode.NameNode: createNameNode [-bootstrapStandby]
15/08/09 16:48:45 WARN common.Util: Path /home/hadoop/data/nn should be specified as a URI in configuration files. Please update hdfs configu
tion.
15/08/09 16:48:45 WARN common.Util: Path /home/hadoop/data/nn should be specified as a URI in configuration files. Please update hdfs configu
tion.
15/08/09 16:48:45 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where appl
able
=====================================================
About to bootstrap Standby ID nn2 from:
           Nameservice ID: ha-cluster
        Other Namenode ID: nn1
  Other NN's HTTP address: http://192.168.0.51:50070
  Other NN's IPC  address: nn1.cluster.com/192.168.0.51:8020
             Namespace ID: 682278749
            Block pool ID: BP-1244531934-192.168.0.51-1439118899139
               Cluster ID: CID-96aa1e31-2ab9-4af5-87b2-0e20d1910ca7
           Layout version: -60
=====================================================
15/08/09 16:48:46 INFO common.Storage: Storage directory /home/hadoop/data/nn has been successfully formatted.
15/08/09 16:48:46 WARN common.Util: Path /home/hadoop/data/nn should be specified as a URI in configuration files. Please update hdfs configu
tion.
15/08/09 16:48:46 WARN common.Util: Path /home/hadoop/data/nn should be specified as a URI in configuration files. Please update hdfs configu
tion.
15/08/09 16:48:48 INFO namenode.TransferFsImage: Opening connection to http://192.168.0.51:50070/imagetransfer?getimage=1&txid=0&storageInfo=
0:682278749:0:CID-96aa1e31-2ab9-4af5-87b2-0e20d1910ca7
15/08/09 16:48:48 INFO namenode.TransferFsImage: Image Transfer timeout configured to 60000 milliseconds
15/08/09 16:48:48 INFO namenode.TransferFsImage: Transfer took 0.00s at 0.00 KB/s
15/08/09 16:48:48 INFO namenode.TransferFsImage: Downloaded file fsimage.ckpt_0000000000000000000 size 353 bytes.
15/08/09 16:48:48 INFO util.ExitUtil: Exiting with status 0
15/08/09 16:48:48 INFO namenode.NameNode: SHUTDOWN_MSG:
/************************************************************
SHUTDOWN_MSG: Shutting down NameNode at nn2.cluster.com/192.168.0.52
************************************************************/
[hadoop@nn2 ~]$
[hadoop@nn2 ~]$
[hadoop@nn2 ~]$ ll data/
total 12
drwxrwxr-x 3 hadoop hadoop 4096 Aug  9 16:44 jn
drwxrwxr-x 3 hadoop hadoop 4096 Aug  9 16:48 nn
drwxrwxr-x 2 hadoop hadoop 4096 Aug  9 16:40 zookeeper
```

[hadoop@nn2 ~]$ hadoop-daemon.sh start namenode
starting namenode, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-namenode-nn2.cluster.com.out
[hadoop@nn2 ~]$ jps
1703 Jps
1656 NameNode
1486 JournalNode
[hadoop@nn2 ~]$

[hadoop@nn1 ~]$ for i in {1..3}; do ssh 192.168.0.5$i "hostname;jdk/bin/jps;echo -e '\n'";done
nn1.cluster.com
1644 NameNode
1781 Jps
1484 JournalNode

nn2.cluster.com
1656 NameNode
1486 JournalNode
1755 Jps

dn1.cluster.com
1472 JournalNode
1574 Jps

[hadoop@nn1 ~]$

Start the zookeeper servers:

```
[hadoop@nn1 ~]$ zkServer.sh start
JMX enabled by default
Using config: /home/hadoop/zookeeper/bin/../conf/zoo.cfg
Starting zookeeper ... STARTED
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ssh nn2
Last login: Sun Aug  9 16:47:09 2015 from 192.168.0.51
[hadoop@nn2 ~]$ zkServer.sh start
JMX enabled by default
Using config: /home/hadoop/zookeeper/bin/../conf/zoo.cfg
Starting zookeeper ... STARTED
[hadoop@nn2 ~]$
[hadoop@nn2 ~]$ ssh dn1
Last login: Sun Aug  9 16:48:22 2015 from 192.168.0.52
[hadoop@dn1 ~]$ zkServer.sh start
JMX enabled by default
Using config: /home/hadoop/zookeeper/bin/../conf/zoo.cfg
Starting zookeeper ... STARTED
[hadoop@dn1 ~]$
[hadoop@dn1 ~]$ logout
Connection to dn1 closed.
[hadoop@nn2 ~]$ logout
Connection to nn2 closed.
[hadoop@nn1 ~]$
```


```
[hadoop@nn1 ~]$ zkServer.sh start
JMX enabled by default
Using config: /home/hadoop/zookeeper/bin/../conf/zoo.cfg
Starting zookeeper ... STARTED
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$ ssh nn2
Last login: Sun Aug  9 16:47:09 2015 from 192.168.0.51
[hadoop@nn2 ~]$ zkServer.sh start
JMX enabled by default
Using config: /home/hadoop/zookeeper/bin/../conf/zoo.cfg
Starting zookeeper ... STARTED
[hadoop@nn2 ~]$
[hadoop@nn2 ~]$ ssh dn1
Last login: Sun Aug  9 16:48:22 2015 from 192.168.0.52
[hadoop@dn1 ~]$ zkServer.sh start
JMX enabled by default
Using config: /home/hadoop/zookeeper/bin/../conf/zoo.cfg
Starting zookeeper ... STARTED
[hadoop@dn1 ~]$
[hadoop@dn1 ~]$ logout
Connection to dn1 closed.
[hadoop@nn2 ~]$ logout
Connection to nn2 closed.
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
[hadoop@nn1 ~]$
```


```
[hadoop@nn1 ~]$ for i in {1..3}; do ssh 192.168.0.5$i "hostname;jdk/bin/jps;echo -e '\n"';done
nn1.cluster.com
1802 QuorumPeerMain
```

1644 NameNode
1851 Jps
1484 JournalNode

nn2.cluster.com
1656 NameNode
1802 QuorumPeerMain
1845 Jps
1486 JournalNode

dn1.cluster.com
1613 QuorumPeerMain
1472 JournalNode
1649 Jps

[hadoop@nn1 ~]$

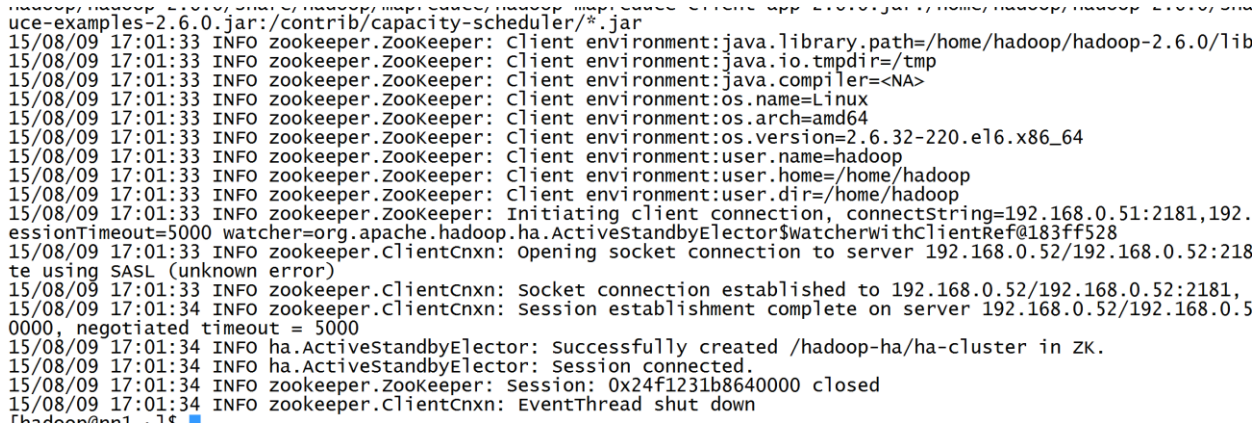
Start datanode:

[hadoop@nn1 ~]$ ssh dn1
The authenticity of host 'dn1 (192.168.0.53)' can't be established.
RSA key fingerprint is b1:b3:d8:e3:e2:36:75:ae:6a:8b:0a:ce:85:7b:ce:2f.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'dn1' (RSA) to the list of known hosts.
Last login: Sun Aug 9 16:51:34 2015 from 192.168.0.52
[hadoop@dn1 ~]$
[hadoop@dn1 ~]$
[hadoop@dn1 ~]$ hadoop-daemon.sh start datanode
starting datanode, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-datanode-dn1.cluster.com.out
[hadoop@dn1 ~]$
[hadoop@dn1 ~]$
[hadoop@dn1 ~]$ jps
1613 QuorumPeerMain
1732 Jps
1472 JournalNode
1690 DataNode
[hadoop@dn1 ~]$

Format Zookeeper from NN1:

[hadoop@nn1 ~]$ hdfs zkfc -formatZK

15/08/09 17:01:34 INFO ha.ActiveStandbyElector: Successfully created /hadoop-ha/ha-cluster in ZK.



Start zookeeper failover controller:

[hadoop@nn1 ~]$ hadoop-daemon.sh start zkfc
starting zkfc, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-zkfc-nn1.cluster.com.out
[hadoop@nn1 ~]$ ssh nn2
Last login: Sun Aug 9 17:01:03 2015 from 192.168.0.51
[hadoop@nn2 ~]$ hadoop-daemon.sh start zkfc
starting zkfc, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-zkfc-nn2.cluster.com.out
[hadoop@nn2 ~]$
(reverse-i-search)`f': vim hadoop/etc/hadoop/hd^C-site.xml
[hadoop@nn2 ~]$ logout
Connection to nn2 closed.
[hadoop@nn1 ~]$ for i in {1..3}; do ssh 192.168.0.5$i "hostname;jdk/bin/jps;echo -e '\n"";done
nn1.cluster.com
2287 DFSZKFailoverController
2370 Jps
1802 QuorumPeerMain
1644 NameNode
1484 JournalNode

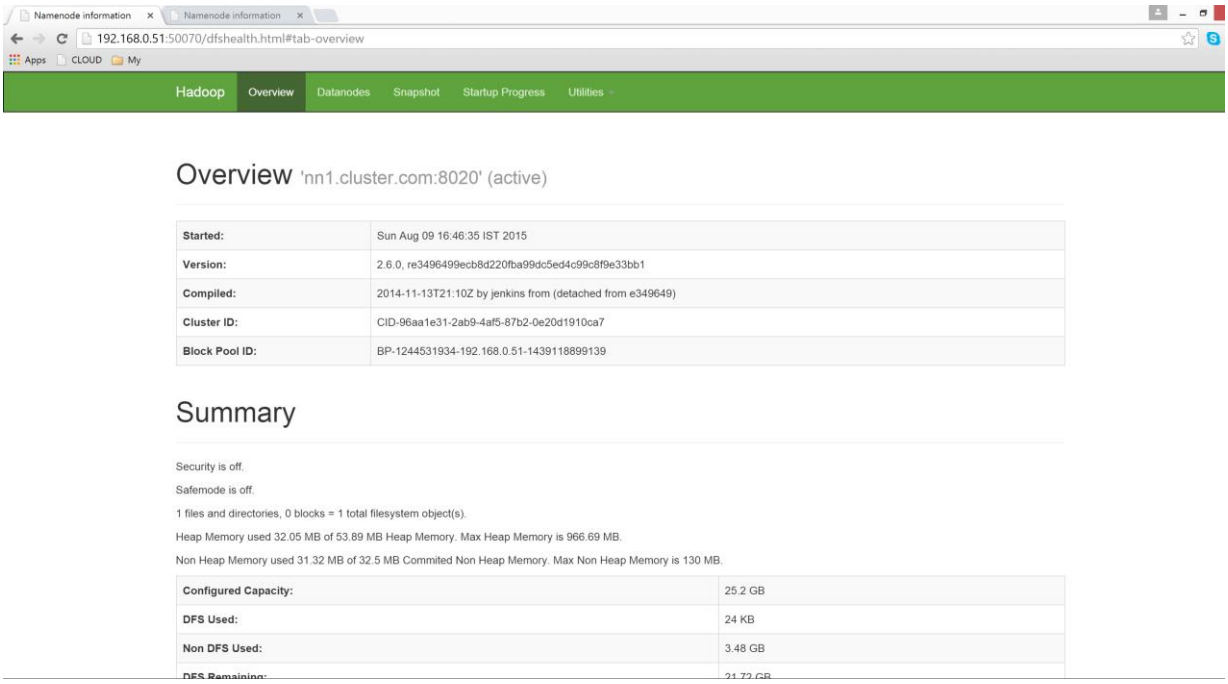
nn2.cluster.com
2186 DFSZKFailoverController
1656 NameNode
1802 QuorumPeerMain
1486 JournalNode
2243 Jps

dn1.cluster.com
1958 Jps
1613 QuorumPeerMain
1472 JournalNode
1690 DataNode

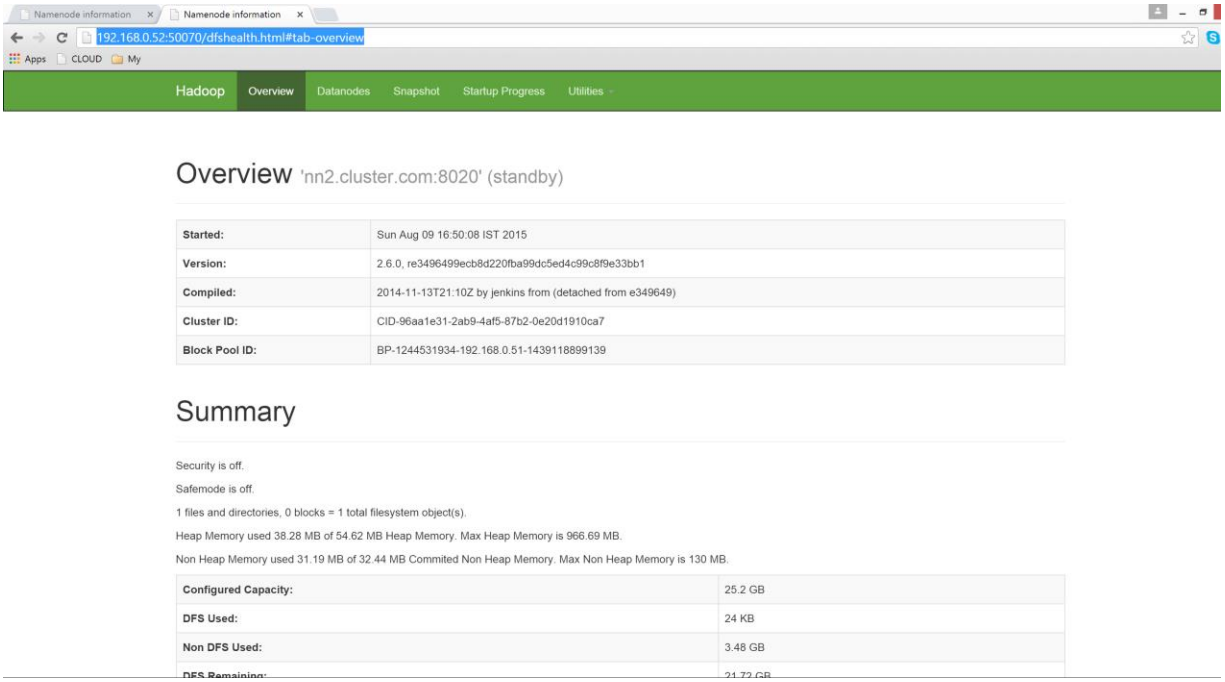
[hadoop@nn1 ~]$

```
[hadoop@nn1 ~]$ hadoop-daemon.sh start zkfc
starting zkfc, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-zkfc-nn1.cluster.com.out
[hadoop@nn1 ~]$ ssh nn2
Last login: Sun Aug  9 17:01:03 2015 from 192.168.0.51
[hadoop@nn2 ~]$ hadoop-daemon.sh start zkfc
starting zkfc, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-zkfc-nn2.cluster.com.out
[hadoop@nn2 ~]$
(reverse-i-search)`f': vim hadoop/etc/hadoop/hd^C-site.xml
[hadoop@nn2 ~]$ logout
Connection to nn2 closed.
[hadoop@nn1 ~]$ for i in {1..3}; do ssh 192.168.0.5$i "hostname;jdk/bin/jps;echo -e '\n'";done
nn1.cluster.com
2287 DFSZKFailoverController
2370 Jps
1802 QuorumPeerMain
1644 NameNode
1484 JournalNode


nn2.cluster.com
2186 DFSZKFailoverController
1656 NameNode
1802 QuorumPeerMain
1486 JournalNode
2243 Jps


dn1.cluster.com
1958 Jps
1613 QuorumPeerMain
1472 JournalNode
1690 DataNode


[hadoop@nn1 ~]$
```

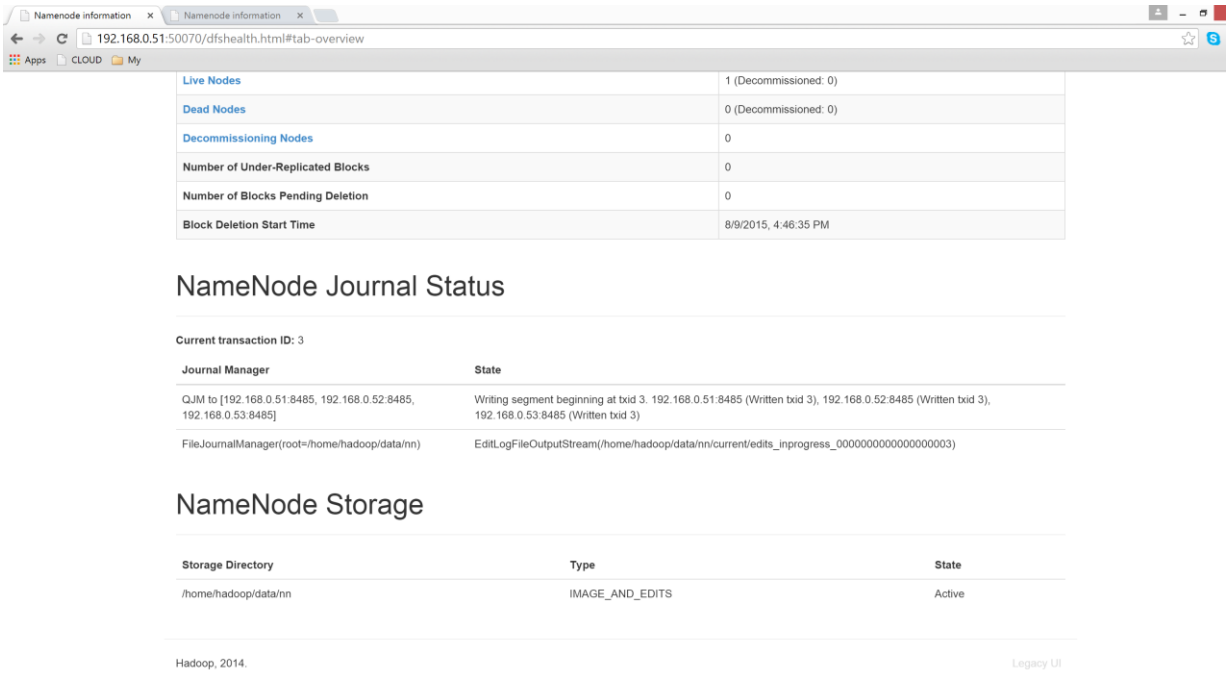
Active namenode:



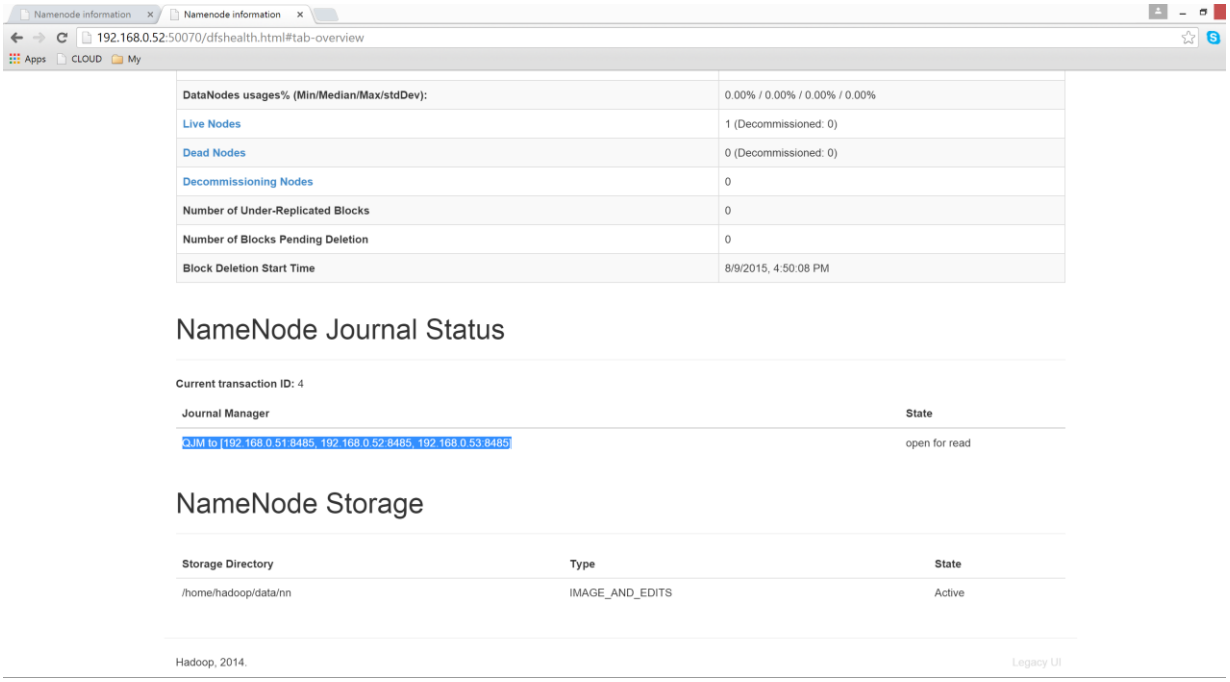
Standby namenode:



Namenode 1 writing the data:

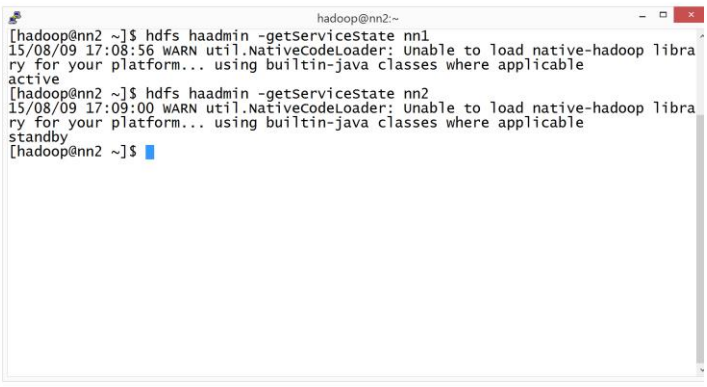


Namenode 2 reading the data:

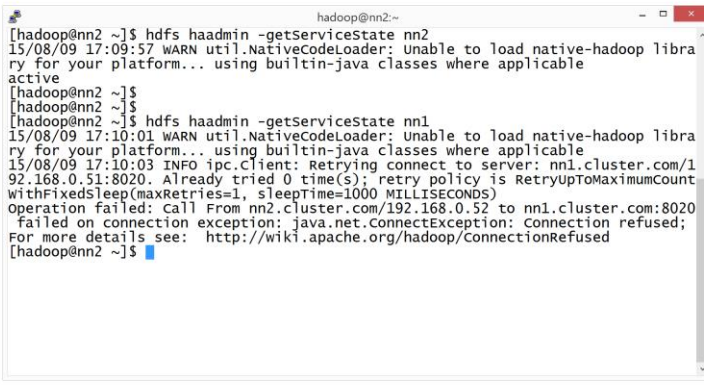

Namenode information
Namenode information
192.168.0.52:50070/dfshealth.html#tab-overview
Apps
CLOUD
My
DataNodes usages% (Min/Median/Max/stdDev): 0.00% / 0.00% / 0.00% / 0.00%
Live Nodes 1 (Decommissioned: 0)
Dead Nodes 0 (Decommissioned: 0)
Decommissioning Nodes 0
Number of Under-Replicated Blocks 0
Number of Blocks Pending Deletion 0
Block Deletion Start Time 8/9/2015, 4:50:08 PM
NameNode Journal Status
Current transaction ID: 4
Journal Manager
State
QJM to [192.168.0.51:8485, 192.168.0.52:8485, 192.168.0.53:8485]
open for read
NameNode Storage
Storage Directory
Type
State
/home/hadoop/data/nn
IMAGE_AND_EDITS
Active
Hadoop, 2014.
Legacy UI

TESTING

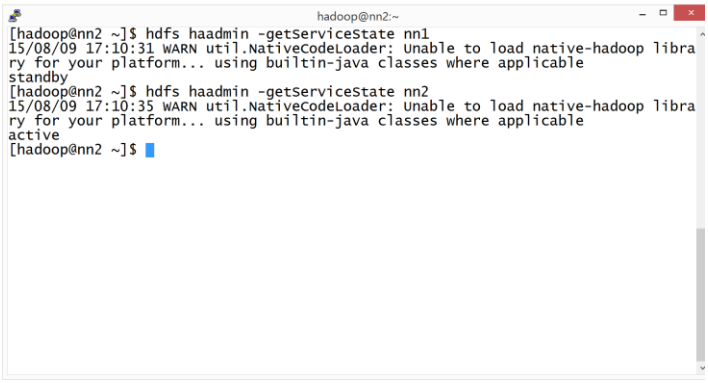

hadoop@nn1:~
[hadoop@nn1 ~]$ hdfs haadmin -getServiceState nn1
15/08/09 17:07:52 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where appli
able
active
[hadoop@nn1 ~]$ hdfs haadmin -getServiceState nn2
15/08/09 17:08:23 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where appli
able
standby
[hadoop@nn1 ~]$

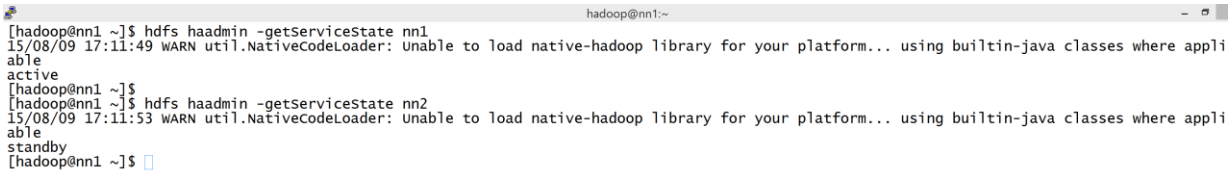

hadoop@nn2:~
[hadoop@nn2 ~]$ hdfs haadmin -getServiceState nn1
15/08/09 17:08:56 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
active
[hadoop@nn2 ~]$ hdfs haadmin -getServiceState nn2
15/08/09 17:09:00 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
standby
[hadoop@nn2 ~]$


hadoop@nn1:~
[hadoop@nn1 ~]$ jps
2287 DFSZKFailoverController
2489 Jps
1802 QuorumPeerMain
1644 NameNode
1484 JournalNode
[hadoop@nn1 ~]$ kill -9 1644
[hadoop@nn1 ~]$


hadoop@nn2:~
[hadoop@nn2 ~]$ hdfs haadmin -getServiceState nn2
15/08/09 17:09:57 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
active
[hadoop@nn2 ~]$
[hadoop@nn2 ~]$
[hadoop@nn2 ~]$ hdfs haadmin -getServiceState nn1
15/08/09 17:10:01 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
15/08/09 17:10:03 INFO ipc.Client: Retrying connect to server: nn1.cluster.com/1
92.168.0.51:8020. Already tried 0 time(s); retry policy is RetryUpToMaximumCount
WithFixedSleep(maxRetries=1, sleepTime=1000 MILLISECONDS)
Operation failed: Call From nn2.cluster.com/192.168.0.52 to nn1.cluster.com:8020
 failed on connection exception: java.net.ConnectException: Connection refused;
For more details see: http://wiki.apache.org/hadoop/ConnectionRefused
[hadoop@nn2 ~]$


hadoop@nn1:~
[hadoop@nn1 ~]$ hadoop-daemon.sh start namenode
starting namenode, logging to /home/hadoop/hadoop-2.6.0/logs/hadoop-hadoop-namenode-nn1.cluster.com.out
[hadoop@nn1 ~]$ jps
2287 DFSZKFailoverController
1802 QuorumPeerMain
2538 NameNode
1484 JournalNode
2585 Jps
[hadoop@nn1 ~]$


hadoop@nn2:~
[hadoop@nn2 ~]$ hdfs haadmin -getServiceState nn1
15/08/09 17:10:31 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
standby
[hadoop@nn2 ~]$ hdfs haadmin -getServiceState nn2
15/08/09 17:10:35 WARN util.NativeCodeLoader: Unable to load native-hadoop libra
ry for your platform... using builtin-java classes where applicable
active
[hadoop@nn2 ~]$



Start Resource manager daemons

On NN1:
[hadoop@nn1 ~]$ mr-jobhistory-daemon.sh start historyserver
[hadoop@nn1 ~]$ yarn-daemon.sh start resourcemanager

<Resource manager web app is running on 9026>

On NN2:
[hadoop@nn2 ~]$ mr-jobhistory-daemon.sh start historyserver
[hadoop@nn2 ~]$ yarn-daemon.sh start resourcemanager

On DN1:

[hadoop@nn1 ~]$ yarn-daemon.sh start nodemanager

[hadoop@nn1 ~]$ yarn rmadmin -getServiceState rm1
[hadoop@nn1 ~]$ yarn rmadmin -getServiceState rm2