10.配置hadoop高可用文件

配置hadoop高可用文件

1、 配置core-site.xml文件如下内容（以后配置东西都在hadoop007，配置完成后分发到另外的节点服务器）：

(配置文件组如果修改了集群名称，后面的hd一定要替换成修改后的名称！！！)

```
<configuration>
<property>
    <name>fs.defaultFS</name>
    <value>hdfs://hd</value>
    <description>HDFS主入口，hadoopcluster仅是作为集群的逻辑名称.
    </description>
</property>
</configuration>
```

```
<configuration>
<property>
    <name>fs.defaultFS</name>
    <value>hdfs://hd</value>
    <description>HDFS主入口，hadoopcluster仅是作为集群的逻辑名称，可随意更改但务必与
hdfs-site.xml中dfs.nameservices值保持一致
    </description>
</property>

<property>
    <name>hadoop.tmp.dir</name>
    <value>/home/hadoop/hadoop-2.7.6/tmp</value>
    <description>默认的hadoop.tmp.dir指向的是/tmp目录，将导致namenode与datanode数据全
都保存在易失目录中，此处进行修改
    </description>
</property>

<property>
    <name>ha.zookeeper.quorum</name>
    <value>hadoop007:2181,hadoop008:2181,hadoop009:2181</value>
    <description>zookeeper集群地址，集群以逗号进行分隔。</description>
</property>
```

```
</configuration>
```

2、配置hadoop-env.sh如下内容:

在文件此位置追加内容:


```
export HDFS_NAMENODE_USER="hadoop"
export HDFS_DATANODE_USER="hadoop"
export HDFS_ZKFC_USER="hadoop"
export HDFS_JOURNALNODE_USER="hadoop"
```


3、配置hdfs-site.xml:

```
<configuration>
<property>
  <name>dfs.replication</name>
  <value>3</value>
  <description>副本数配置</description>
</property>
<property>
    <name>dfs.nameservices</name>
    <value>hd</value>
    <description> 集群名称，此值在接下来的配置中将多次出现务必注意同步修改(core中的相
```

```
同）</description>
</property>
<property>
    <name>dfs.ha.namenodes.hd</name>
    <value>nn1,nn2</value>
    <description>所有的namenode列表，此处也只是逻辑名称，非namenode所在的主机名称。
</description>
</property>
<property>
    <name>dfs.namenode.rpc-address.hd.nn1</name>
    <value>hadoop007:8020</value>    <description> namenode之间用于RPC通信的地址，
value填写namenode所在的主机地址，注意hadoopcluster与nn1要和上文的配置一致
</description>
</property>
<property>
    <name>dfs.namenode.rpc-address.hd.nn2</name>
    <value>hadoop008:8020</value>
</property>
<property>
    <name>dfs.namenode.http-address.hd.nn1</name>
    <value>hadoop007:50070</value>
    <description>namenode的web访问地址，该版本默认端口9870。建议50070</description>
</property>
<property>
    <name>dfs.namenode.http-address.hd.nn2</name>
    <value>hadoop008:50070</value>
    <description>namenode的web访问地址，该版本默认端口9870。建议50070</description>
</property>
<property>
    <name>dfs.namenode.shared.edits.dir</name>
    <value>qjournal://hadoop007:8485;hadoop008:8485;hadoop009:8485/hd</value>
    <description>
    journalnode主机地址，最少三台，默认端口8485,格式为
qjournal://jn1:port;jn2:port;jn3:port/${nameservices}
    </description>
</property>
<property>
    <name>dfs.client.failover.proxy.provider.hd</name>

<value>org.apache.hadoop.hdfs.server.namenode.ha.ConfiguredFailoverProxyProvider</val
ue>
    <description>故障时自动切换的实现类，照抄即可</description>
</property>
```

```
<property>
  <name>dfs.ha.fencing.methods</name>
  <value>sshfence</value>
  <description>故障时相互操作方式(namenode要切换active和standby)，这里我们选ssh方式
</description>
</property>
<property>
  <name>dfs.ha.fencing.ssh.private-key-files</name>
  <value>/hadoop/.ssh/id_rsa</value>
  <description>修改为自己用户的ssh key存放地址</description>
</property>
<property>
    <name>dfs.journalnode.edits.dir</name>
    <value>/home/hadoop/hadoop-2.7.6/logs</value>
    <description>namenode日志文件输出路径，即journalnode读取变更的位置</description>
</property>
<property>
    <name>dfs.ha.automatic-failover.enabled</name>
    <value>true</value>
    <description>启用自动故障转移</description>
</property>


</configuration>
```

4、配置workers(slaves)：
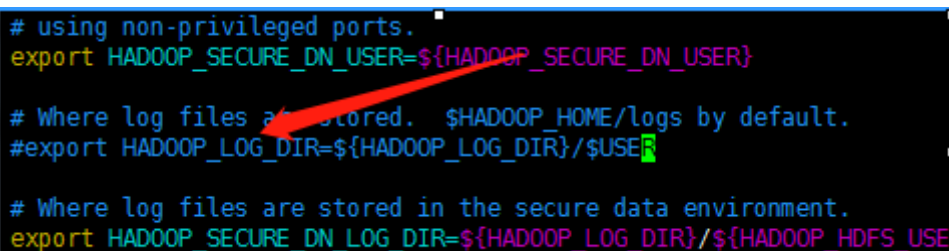
删除/home/hadoop/hadoop-2.7.6/etc/hadoop路径下slaves文件中的localhost并添加datenode主机名
（）。

修改内容如下：
hadoop007
hadoop008
hadoop009

5、配置logs文件，以便后续日志查看

需要修改的内容在hadoop-env.sh文件内下图所示位置

修改路径为：/home/hadoop/hadoop-2.7.6/logs（没有此logs目录建议先在服务器上建立此目录）

```
# Where log files are stored.  $HADOOP_HOME/logs by default.
export HADOOP_LOG_DIR=/home/hadoop/hadoop-2.7.6/logs
```

6、把配置好的hadoop文件夹及其所有内容分发到008、009服务器，环境变量my_env.sh也需要分发，分发完成后更新一下环境。

7、启动hadoop

1、确保之前的zk正常启动完成。

2、分别启动三台服务器的journalnode（执行三次，每台执行一次）

启动命令：`/home/hadoop/hadoop-2.7.6/sbin/hadoop-daemon.sh start journalnode`

当看到journalnode进程启动了时候就说明启动完成

```
starting journalnode, logging to /home/hadoop/hadoop-2.7.6/
[hadoop@hadoop007 hadoop]$ jps
2506 JournalNode
2555 Jps
1901 QuorumPeerMain
[hadoop@hadoop007 hadoop]$
```

3、只在007服务器上格式化namenode

格式化命令：`/home/hadoop/hadoop-2.7.6/bin/hdfs namenode -format`

4、在hadoop007启动namenode

启动命令：`/home/hadoop/hadoop-2.7.6/sbin/hadoop-daemon.sh start namenode`

5、在008服务器上同步信息并启动namenode

同步信息命令：`/home/hadoop/hadoop-2.7.6/bin/hdfs namenode -bootstrapStandby`
启动namenode命令：`/home/hadoop/hadoop-2.7.6/sbin/hadoop-daemon.sh start namenode`

6、在主节点007上初始化ZK

初始化命令：`/home/hadoop/hadoop-2.7.6/bin/hdfs zkfc -formatZK`

7、在007、008上启动ZK

zk启动命令：`/home/hadoop/hadoop-2.7.6/sbin/hadoop-daemon.sh start zkfc`

8、在主节点启动HDFS集群。

```
/home/hadoop/hadoop-2.7.6/sbin/start-dfs.sh
```

```
Starting namenodes on [hadoop007 hadoop008]
hadoop008: starting namenode, logging to /home/hadoop/hadoop-2.7.6/logs/hadoop-hadoop-namenode-hadoop008.out
hadoop007: starting namenode, logging to /home/hadoop/hadoop-2.7.6/logs/hadoop-hadoop-namenode-hadoop007.out
hadoop008: starting datanode, logging to /home/hadoop/hadoop-2.7.6/logs/hadoop-hadoop-datanode-hadoop008.out
hadoop009: starting datanode, logging to /home/hadoop/hadoop-2.7.6/logs/hadoop-hadoop-datanode-hadoop009.out
hadoop007: starting datanode, logging to /home/hadoop/hadoop-2.7.6/logs/hadoop-hadoop-datanode-hadoop007.out
Starting journal nodes [hadoop007 hadoop008 hadoop009]
hadoop008: journalnode running as process 3105. Stop it first.
hadoop009: journalnode running as process 2671. Stop it first.
hadoop007: journalnode running as process 3360. Stop it first.
Starting ZK Failover Controllers on NN hosts [hadoop007 hadoop008]
hadoop008: zkfc running as process 3348. Stop it first.
hadoop007: zkfc running as process 3589. Stop it first.
[hadoop@hadoop007 sbin]$
```

在主节点查看nn1和nn2是否正常。一个为active一个为standby

/home/hadoop/hadoop-2.7.6/bin/hdfs haadmin -getServiceState nn1

/home/hadoop/hadoop-2.7.6/bin/hdfs haadmin -getServiceState nn2

```
5286 DFSZKFailoverController
5143 NameNode
5820 Jps
1901 QuorumPeerMain
[hadoop@hadoop007 hadoop-2.7.6]$ /home/hadoop/hadoop-2.7.6/bin/hdfs haadmin -get
active
[hadoop@hadoop007 hadoop-2.7.6]$ /home/hadoop/hadoop-2.7.6/bin/hdfs haadmin -get
standby
[hadoop@hadoop007 hadoop-2.7.6]$
```

7、配置yarn参数

1、在mapred-site.xml添加如下内容：

命令：`vim /home/hadoop/hadoop-2.7.6/etc/hadoop/mapred-site.xml`
内容：

```xml
<configuration>
<!-- 指定mr框架为yarn方式 -->
<property>
    <name>mapreduce.framework.name</name>
    <value>yarn</value>
</property>
<!-- 指定mapreduce jobhistory地址 -->
<property>
    <name>mapreduce.jobhistory.address</name>
    <value>hadoop007:10020</value>
</property>
</configuration>
```

2、配置yarn-site.xml文件

命令：vim /home/hadoop/hadoop-2.7.6/etc/hadoop/yarn-site.xml
内容：

```xml
<configuration>
<!-- 开启RM高可用 -->
<property>
    <name>yarn.resourcemanager.ha.enabled</name>
    <value>true</value>
</property>

<!-- 指定RM的cluster id -->
<property>
    <name>yarn.resourcemanager.cluster-id</name>
    <value>yarncluster</value>
</property>

<!-- 指定RM的名字 -->
<property>
    <name>yarn.resourcemanager.ha.rm-ids</name>
    <value>rm1,rm2</value>
</property>

<!-- 分别指定RM的地址 -->
<property>
    <name>yarn.resourcemanager.hostname.rm1</name>
    <value>hadoop007</value>
</property>

<property>
    <name>yarn.resourcemanager.hostname.rm2</name>
    <value>hadoop008</value>
</property>

<!-- 指定zk集群地址 -->
<property>
    <name>yarn.resourcemanager.zk-address</name>
    <value>hadoop007:2181,hadoop008:2181,hadoop009:2181</value>
</property>

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

<property>
    <name>yarn.log-aggregation-enable</name>
```

```
        <value>true</value>
</property>

<property>
        <name>yarn.log-aggregation.retain-seconds</name>
        <value>86400</value>
</property>

<!-- 启用自动恢复 -->
<property>
        <name>yarn.resourcemanager.recovery.enabled</name>
        <value>true</value>
</property>

<!-- 制定resourcemanager的状态信息存储在zookeeper集群上 -->
<property>
        <name>yarn.resourcemanager.store.class</name>

<value>org.apache.hadoop.yarn.server.resourcemanager.recovery.ZKRMStateStore</value>
</property>
</configuration>
```
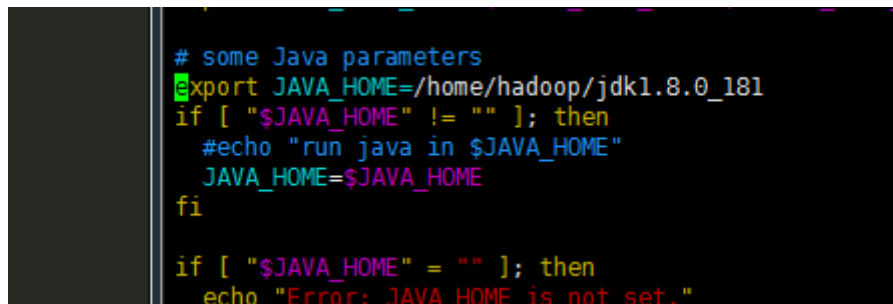
3、修改yarn-env.sh的jdk路径

命令：`vim /home/hadoop/hadoop-2.7.6/etc/hadoop/yarn-env.sh`

修改内容：
export JAVA_HOME=/home/hadoop/jdk1.8.0_181

4、修改完分发所有配置文件到其他节点（使用 pwd 命令一定要进入到/home/hadoop/hadoop-2.7.6/etc/hadoop/目录下，否则请使用绝对路径）

```
scp mapred-site.xml hadoop008:`pwd`/
scp mapred-site.xml hadoop009:`pwd`/
scp yarn-site.xml hadoop009:`pwd`/
scp yarn-site.xml hadoop008:`pwd`/
scp yarn-env.sh hadoop008:`pwd`/
scp yarn-env.sh hadoop009:`pwd`/
```

5、在主节点启动yarn集群。

```
/home/hadoop/hadoop-2.7.6/sbin/start-yarn.sh
```

6、在007上单独启动resourcemanager。008上启动yarn所有进程

007上执行： `/home/hadoop/hadoop-2.7.6/sbin/yarn-daemon.sh start resourcemanager`

008 上执行 `/home/hadoop/hadoop-2.7.6/sbin/start-yarn.sh`

7、启动完毕后，此时007，008、009上对应的进程如下则为正确：

hadoop007

```
hadoop007: starting nodemanager, logging to /hor
[hadoop@hadoop007 hadoop-2.7.6]$ jps
5024 JournalNode
5520 DataNode
6980 Jps
5286 DFSZKFailoverController
5143 NameNode
6827 ResourceManager
1901 QuorumPeerMain
6942 NodeManager
[hadoop@hadoop007 hadoop-2.7.6]$
```

hadoop008

```
starting resourcemanager, logging
[hadoop@hadoop008 sbin]$ jps
5744 ResourceManager
5781 Jps
4614 DFSZKFailoverController
4472 DataNode
1962 QuorumPeerMain
4333 NameNode
4222 JournalNode
5583 NodeManager
[hadoop@hadoop008 sbin]$
```

hadoop009

```
[hadoop@hadoop009 logs]$ jps
1872 QuorumPeerMain
3616 NodeManager
3189 DataNode
3101 JournalNode
3726 Jps
```