

Hadoop cluster install (server 6)

- 가상 서버 6대의 설정이 모두 마친 상태임을 가정

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도구

새로 만들기(N) 설정(S) 삭제 표시(H)

가상 머신 목록	가상 머신 상세 정보	미리 보기
an01 (hbase-phoenix-spark) 실행 중	일반 이름: sn01 운영 체제: Red Hat (64-bit)	미리 보기
sn01 (hbase-phoenix-spark) 실행 중	시스템 기본 메모리: 4096 MB 프로세서: 2 부팅 순서: 플로피, 광 디스크, 하드 디스크 가속: VT-X/AMD-V, 네스티드 페이징, PAE/NX, KVM 반가상화	
rm01 (hbase-phoenix-spark) 실행 중	일반 이름: rm01 운영 체제: Red Hat (64-bit)	미리 보기
dn01 (hbase-phoenix-spark) 실행 중	시스템 기본 메모리: 4096 MB 프로세서: 2 부팅 순서: 플로피, 광 디스크, 하드 디스크 가속: VT-X/AMD-V, 네스티드 페이징, PAE/NX, KVM 반가상화	
dn02 (hbase-phoenix-spark) 실행 중		
dn03 (hbase-phoenix-spark) 실행 중		

1. Zookeeper install

- 주키퍼 계정 생성
- 주키퍼 클러스터는 an01, sn01, rm01 3대의 서버에만 설치함

action server: an01, sn01, rm01

pwd: /root

adduser zookeeper

passwd zookeeper // 비밀번호 설정, 편의상 zookeeper

su - zookeeper // 주키퍼 계정 접속

- 주키퍼 계정간 ssh 통신

action server: an01, sn01, rm01

pwd: /home/zookeeper

ssh-keygen

ssh-copy-id -i .ssh/id_rsa.pub zookeeper@an01

ssh-copy-id -i .ssh/id_rsa.pub zookeeper@sn01

ssh-copy-id -i .ssh/id_rsa.pub zookeeper@rm01

ssh [서버명]을 통해 비밀번호 여부 없이 접속 확인

1. Zookeeper install

- 주키퍼 설치
- an01서버에서 설치, 설정 후 재압축 및 타 sn01, rm01 서버에 배포

```
action server: an01  
pwd: /home/zookeeper
```

```
wget https://archive.apache.org/dist/zookeeper/zookeeper-3.4.10/zookeeper-3.4.10.tar.gz  
tar xvfz zookeeper-3.4.10.tar.gz  
cd zookeeper-3.4.10
```

- 주키퍼 파일 설정

```
action server: an01  
pwd: /home/zookeeper/zookeeper-3.4.10  
  
cp conf/zoo_sample.cfg conf/zoo.cfg  
vi conf/zoo.cfg
```

tickTime=2000
initLimit=10
syncLimit=5
dataDir=/home/zookeeper/data
clientPort=2181
maxClientCnxns=0
maxSessionTimeout=180000
server.1=an01:2888:3888
server.2=sn01:2888:3888
server.3=rm01:2888:3888

```
[zookeeper@an01 ~]$ cd zookeeper-3.4.10
[zookeeper@an01 zookeeper-3.4.10]$ cat ./conf/zoo.cfg
tickTime=2000
initLimit=10
syncLimit=5
dataDir=/home/zookeeper/data
clientPort=2181
maxClientCnxns=0
maxSessionTimeout=180000
server.1=an01:2888:3888
server.2=sn01:2888:3888
server.3=rm01:2888:3888

[zookeeper@an01 zookeeper-3.4.10]$
```

cd ..

1. Zookeeper install

- 재압축 후 배포

```
action server: an01  
pwd: /home/zookeeper  
  
tar cvfz zookeeper.tar.gz zookeeper-3.4.10  
scp zookeeper.tar.gz zookeeper@sn01:/home/zookeeper  
scp zookeeper.tar.gz zookeeper@rm01:/home/zookeeper
```

- 압축 해제

```
action server: sn01, rm01  
pwd: /home/zookeeper  
  
tar xvfz zookeeper.tar.gz
```

1. Zookeeper install

- 각 서버별 myid 설정

```
action server: an01,sn01, rm01  
pwd: /home/zookeeper
```

```
mkdir data  
cd data  
vi myid // an01에는 1, sn01에는 2, rm01에는 3 입력 후 저장  
cd /home/zookeeper/zookeeper-3.4.10
```

- 주키퍼 실행

```
action server: an01, sn01, rm01  
pwd: /home/zookeeper/zookeeper-3.4.10
```

```
./bin/zkServer.sh start // 서버 시작  
./bin/zkServer.sh status // 상태 확인
```

```
[zookeeper@an01 zookeeper-3.4.10]$ ./bin/zkServer.sh status
ZooKeeper JMX enabled by default
Using config: /home/zookeeper/zookeeper-3.4.10/bin/../conf/zoo.cfg
Mode: follower
[zookeeper@an01 zookeeper-3.4.10]$
```

```
[zookeeper@sn01 zookeeper-3.4.10]$ ./bin/zkServer.sh status
ZooKeeper JMX enabled by default
Using config: /home/zookeeper/zookeeper-3.4.10/bin/../conf/zoo.cfg
Mode: follower
[zookeeper@sn01 zookeeper-3.4.10]$
```

```
[zookeeper@rm01 zookeeper-3.4.10]$ ./bin/zkServer.sh status
ZooKeeper JMX enabled by default
Using config: /home/zookeeper/zookeeper-3.4.10/bin/../conf/zoo.cfg
Mode: leader
[zookeeper@rm01 zookeeper-3.4.10]$
```

한 서버는 leader, 두 서버는 follower

exit // root 계정으로 변환

- 주키퍼 종료

action server: an01, sn01, rm01

pwd: /home/zookeeper/zookeeper-3.4.10

./bin/zkServer.sh stop // 곧바로 하둡 설치 후 실행할 것 이기에 종료하지 않음.

2. Hadoop install

- 하둡 관련 계정 생성, 폴더 생성 및 권한 부여

```
action server: all
```

```
pwd: /root
```

```
adduser hadoop
```

```
passwd hadoop // 편의상 Hadoop
```

```
mkdir /dfs
```

```
mkdir /pids
```

```
mkdir /yarn
```

```
chown hadoop /dfs
```

```
chown hadoop /pids
```

```
chown hadoop /yarn
```

```
chgrp hadoop /dfs
```

```
chgrp hadoop /pids
```

```
chgrp hadoop /yarn
```

```
su - hadoop // 하둡 계정 접속
```

2. Hadoop install

- 하둡 계정간 ssh 통신

```
action server: all
```

```
pwd: /home/hadoop
```

```
ssh-keygen
```

```
ssh-copy-id -i .ssh/id_rsa.pub hadoop@an01
```

```
ssh-copy-id -i .ssh/id_rsa.pub hadoop@sn01
```

```
ssh-copy-id -i .ssh/id_rsa.pub hadoop@rm01
```

```
ssh-copy-id -i .ssh/id_rsa.pub hadoop@dn01
```

```
ssh-copy-id -i .ssh/id_rsa.pub hadoop@dn02
```

```
ssh-copy-id -i .ssh/id_rsa.pub hadoop@dn03
```

```
ssh [서버명] // 비밀번호 여부 없이 접속 확인
```

2. Hadoop install

- 하둡 설치
- 마찬가지로 an01서버에서 다운로드 및 설정 후 타 서버들에 배포

```
action server: an01  
pwd: /home/hadoop
```

```
wget https://archive.apache.org/dist/hadoop/core/hadoop-3.1.2/hadoop-3.1.2.tar.gz  
tar xvfz hadoop-3.1.2.tar.gz  
cd ./hadoop-3.1.2/etc/hadoop
```

- 데이터 노드로 사용할 서버 지정

```
action server: an01  
pwd: /home/hadoop/hadoop-3.1.2/etc/hadoop
```

```
vi workers  
dn01  
dn02  
dn03
```

- hdfs와 맵리듀스에서 공통적으로 사용할 환경 설정

```
action server: an01  
pwd: /home/hadoop/hadoop-3.1.2/etc/hadoop  
  
vi core-site.xml
```

```
<?xml version="1.0" encoding="UTF-8"?>  
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>  
<!--  
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  distributed under the License is distributed on an "AS IS" BASIS,  
  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
  See the License for the specific language governing permissions and  
  limitations under the License. See accompanying LICENSE file.  
-->  
  
<!-- Put site-specific property overrides in this file. -->
```

```
<configuration>
  <property>
    <name>fs.defaultFS</name>
    <value>hdfs://NNHA</value>
  </property>
  <property>
    <name>ha.zookeeper.quorum</name>
    <value>an01:2181,sn01:2181,rm01:2181</value>
  </property>
</configuration>
```

- hdfs에서 사용할 환경 설정

```
action server: an01
pwd: /home/hadoop/hadoop-3.1.2/etc/hadoop

vi hdfs-site.xml
```

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
<!--
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```

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```
-->
```

```
<!-- Put site-specific property overrides in this file. -->
```

```
<configuration>
  <property>
    <name>dfs.client.failover.proxy.provider.NNHA</name>
    <value>org.apache.hadoop.hdfs.server.namenode.ha.ConfiguredFailoverProxyProvider</value>
  </property>
  <property>
    <name>dfs.namenode.name.dir</name>
    <value>/dfs/namenode</value>
  </property>
  <property>
    <name>dfs.datanode.data.dir</name>
    <value>/dfs/datanode</value>
  </property>
```

```
<property>
  <name>dfs.journalnode.edits.dir</name>
  <value>/dfs/journalnode</value>
</property>
<property>
  <name>dfs.nameservices</name>
  <value>NNHA</value>
</property>
<property>
  <name>dfs.ha.namenodes.NNHA</name>
  <value>an01,sn01</value>
</property>
<property>
  <name>dfs.namenode.rpc-address.NNHA.an01</name>
  <value>an01:8020</value>
</property>
<property>
  <name>dfs.namenode.rpc-address.NNHA.sn01</name>
  <value>sn01:8020</value>
</property>
<property>
  <name>dfs.namenode.http-address.NNHA.an01</name>
  <value>an01:9870</value>
</property>
<property>
  <name>dfs.namenode.http-address.NNHA.sn01</name>
  <value>sn01:9870</value>
</property>
```

```
<property>
  <name>dfs.namenode.shared.edits.dir</name>
  <value>qjournal://an01:8485;sn01:8485;rm01:8485/NNHA</value>
</property>
<property>
  <name>dfs.ha.automatic-failover.enabled</name>
  <value>true</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>
</configuration>
```

- 맵리듀스에서 사용할 환경 설정

action server: an01

pwd: /home/hadoop/hadoop-3.1.2/etc/hadoop

vi mapred-site.xml


```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="configuration.xsl"?>
<!--
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  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
  See the License for the specific language governing permissions and
  limitations under the License. See accompanying LICENSE file.
-->

<!-- Put site-specific property overrides in this file. -->

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

- yarn에서 사용할 환경 설정

action server: an01

pwd: /home/hadoop/hadoop-3.1.2/etc/hadoop

vi yarn-site.xml

```
<?xml version="1.0"?>
```

```
<!--
```

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limitations under the License. See accompanying LICENSE file.

```
-->
```

```
<configuration>
```

```
  <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>
<property>
  <name>yarn.nodemanager.local-dirs</name>
  <value>/yarn/nm-local-dir</value>
</property>
<property>
  <name>yarn.resourcemanager.fs.state-store.uri</name>
  <value>/yarn/system/rmstore</value>
</property>
<property>
  <name>yarn.resourcemanager.hostname</name>
  <value>rm01</value>
</property>
<property>
  <name>yarn.resourcemanager.address</name>
  <value>rm01:8032</value>
</property>
<property>
  <name>yarn.web-proxy.address</name>
  <value>0.0.0.0:8089</value>
</property>
```

```
<property>
  <name>yarn.application.classpath</name>
  <value>
    /home/hadoop/hadoop-3.1.2/etc/hadoop,
    /home/hadoop/hadoop-3.1.2/share/hadoop/common/*,
    /home/hadoop/hadoop-3.1.2/share/hadoop/common/lib/*,
    /home/hadoop/hadoop-3.1.2/share/hadoop/hdfs/*,
    /home/hadoop/hadoop-3.1.2/share/hadoop/hdfs/lib/*,
    /home/hadoop/hadoop-3.1.2/share/hadoop/mapreduce/*,
    /home/hadoop/hadoop-3.1.2/share/hadoop/mapreduce/lib/*,
    /home/hadoop/hadoop-3.1.2/share/hadoop/yarn/*,
    /home/hadoop/hadoop-3.1.2/share/hadoop/yarn/lib/*
  </value>
</property>
<property>
  <name>yarn.nodemanager.pmem-check-enabled</name>
  <value>>false</value>
</property>
<property>
  <name>yarn.nodemanager.vmem-check-enabled</name>
  <value>>false</value>
</property>
</configuration>
```

- `hadoop-env.sh` 설정

```
action server: an01
pwd: /home/hadoop/hadoop-3.1.2/etc/hadoop

vi hadoop-env.sh

[54번째 줄]
export JAVA_HOME=/opt/apps/jdk8/

[211번째 줄]
export HADOOP_PID_DIR=/pids

cd /home/hadoop // 경로 이동
```

- 재압축 후 배포

```
action server: an01
pwd: /home/hadoop

tar cvfz hadoop.tar.gz hadoop-3.1.2
scp hadoop.tar.gz hadoop@sn01:/home/hadoop
scp hadoop.tar.gz hadoop@rm01:/home/hadoop
scp hadoop.tar.gz hadoop@dn01:/home/hadoop
scp hadoop.tar.gz hadoop@dn02:/home/hadoop
scp hadoop.tar.gz hadoop@dn03:/home/hadoop
```

- 압축 해제

```
action server: sn01, rm01, dn01, dn02, dn03  
pwd: /home/hadoop
```

```
tar xvfz hadoop.tar.gz
```

```
exit // 모든 서버 root계정 변환
```

- 하둡 환경변수 설정

```
action server: all  
pwd: /root
```

```
vi /etc/profile.d/hadoop.sh
```

```
export HADOOP_HOME=/home/hadoop/hadoop-3.1.2  
export PATH=$PATH:$HADOOP_HOME/bin  
export PATH=$PATH:$HADOOP_HOME/sbin
```

```
source /etc/profile.d/hadoop.sh
```

```
su - hadoop // 하둡 계정 재접속  
cd hadoop-3.1.2 // 경로 변경
```

2. Hadoop install

- 하둡 클러스터 실행
- 각 서버마다 실행할 명령어가 다름. 명령어 옆 주석 확인!
- 최초 실행 명령어는 설치 직후 한 번만 실행하고 다음 실행 시에는 생략
- zookeeper 서버가 실행되어있어야 함.

action server: an01, sn01, rm01

pwd: /home/hadoop/hadoop-3.1.2

./bin/hdfs zkfc -formatZK // an01, 최초 실행 1번만

./bin/hdfs --daemon start journalnode // an01, sn01, rm01, 저널 노드 실행

./bin/hdfs namenode -format NNHA // an01, 최초 실행 1번만, 네임노드 초기화

./bin/hdfs --daemon start namenode // an01, 네임 노드 실행

./bin/hdfs --daemon start zkfc // an01, 주키퍼 장애 컨트롤러 실행

./sbin/hadoop-daemons.sh start datanode // an01, 데이터 노드들 실행

* daemon.sh, daemons.sh 명령어가 둘 다 있어 daemon.s.sh 확인

```
./bin/hdfs namenode -bootstrapStandby // sn01, 스탠바이 네임노드 초기화, 최초 실행 1번만
```

* 액티브 네임노드의 메타데이터가 스탠바이 네임노드로 복사됨

```
./bin/hdfs --daemon start namenode // sn01, 네임 노드 실행
```

```
./bin/hdfs --daemon start zkfc // sn01, 주키퍼 장애 컨트롤러 실행
```

```
./sbin/start-yarn.sh // rm01, yarn 클러스터, 리소스 매니저 실행
```

2. Hadoop install

- 실행 중인 프로세스 확인

```
action server: all
```

```
pwd: /home/hadoop/hadoop-3.1.2
```

```
jps
```


an01

```
[hadoop@an01 hadoop-3.1.2]$ jps
1520 JournalNode
1682 DFSZKFailoverController
7721 Jps
1598 NameNode
[hadoop@an01 hadoop-3.1.2]$
```

sn01

```
[hadoop@sn01 hadoop-3.1.2]$ jps
4499 Jps
1524 JournalNode
1896 DFSZKFailoverController
1791 NameNode
[hadoop@sn01 hadoop-3.1.2]$
```

rm01

```
[hadoop@rm01 hadoop-3.1.2]$ jps
1527 JournalNode
2471 Jps
2057 WebAppProxyServer
1678 ResourceManager
[hadoop@rm01 hadoop-3.1.2]$
```

dn01

```
[hadoop@dn01 hadoop-3.1.2]$ jps
1921 DataNode
1429 NodeManager
3350 Jps
[hadoop@dn01 hadoop-3.1.2]$ █
```

dn02

```
[hadoop@dn02 hadoop-3.1.2]$ jps
1952 DataNode
1426 NodeManager
3803 Jps
[hadoop@dn02 hadoop-3.1.2]$ █
```

dn03

```
[hadoop@dn03 hadoop-3.1.2]$ jps
1425 NodeManager
3620 Jps
1917 DataNode
[hadoop@dn03 hadoop-3.1.2]$ █
```

2. Hadoop install

- 액티브, 스탠바이 네임 노드 확인

action server: an01

pwd: /home/hadoop/hadoop-3.1.2

```
./bin/hdfs haadmin -getServiceStandby an01
```

```
./bin/hdfs haadmin -getServiceStandby sn01
```

```
[hadoop@an01 hadoop-3.1.2]$ ./bin/hdfs haadmin -getServiceState an01  
active
```

```
[hadoop@an01 hadoop-3.1.2]$ ./bin/hdfs haadmin -getServiceState sn01  
standby
```

```
[hadoop@an01 hadoop-3.1.2]$ █
```

2. Hadoop install

- 웹 확인

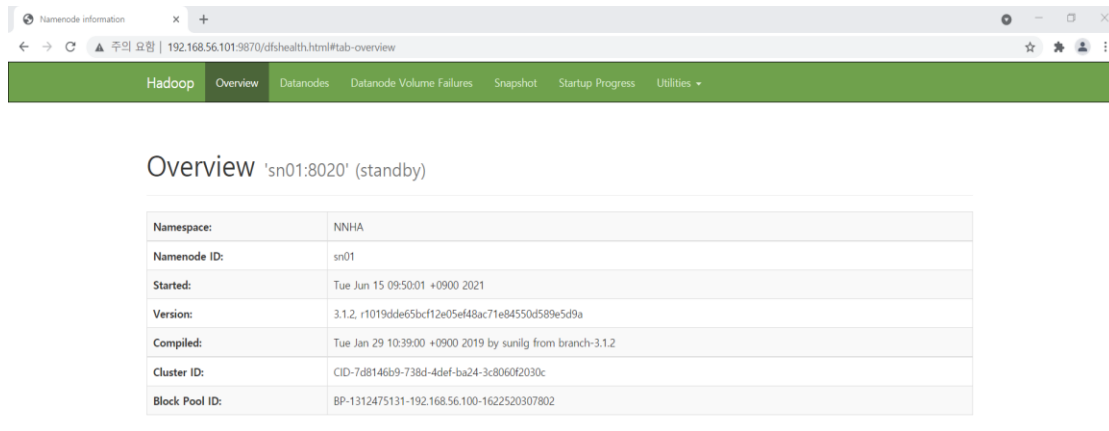
action server: an01, sn01

pwd: /home/hadoop/hadoop-3.1.2

<http://192.168.56.100:9870> // 액티브 네임 노드 웹

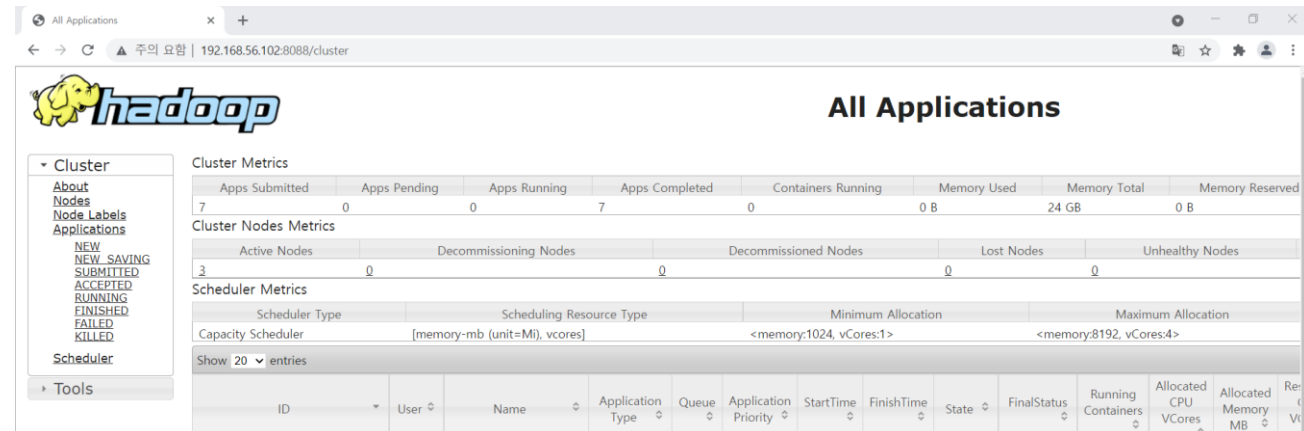
<http://192.168.56.101:9870> // 스탠바이 네임노드 웹

<http://192.168.56.102:8088> // 리소스 매니저 웹



The screenshot shows the 'Overview' page for the NameNode 'sn01:8020' in a standby state. The page has a green header with navigation tabs: Hadoop, Overview, Datanodes, Datanode Volume Failures, Snapshot, Startup Progress, and Utilities. The main content area displays a table with the following information:

Namespace:	NNHA
Namenode ID:	sn01
Started:	Tue Jun 15 09:50:01 +0900 2021
Version:	3.1.2, r1019dde65bcf12e05e48ac71e84550d589e5d9a
Compiled:	Tue Jan 29 10:39:00 +0900 2019 by sunlig from branch-3.1.2
Cluster ID:	CID-7d8146b9-738d-4def-ba24-3c8060f2030c
Block Pool ID:	BP-1312475131-192.168.56.100-1622520307802



The screenshot shows the 'All Applications' page in the Hadoop Resource Manager. The page features the Hadoop logo and a sidebar with navigation links: Cluster, About, Nodes, Node Labels, Applications, NEW, NEW SAVING, SUBMITTED, ACCEPTED, RUNNING, FINISHED, FAILED, KILLED, Scheduler, and Tools. The main content area displays several metrics tables:

Apps Submitted	Apps Pending	Apps Running	Apps Completed	Containers Running	Memory Used	Memory Total	Memory Reserved
7	0	0	7	0	0 B	24 GB	0 B

Active Nodes	Decommissioning Nodes	Decommissioned Nodes	Lost Nodes	Unhealthy Nodes
3	0	0	0	0

Scheduler Type	Scheduling Resource Type	Minimum Allocation	Maximum Allocation
Capacity Scheduler	[memory-mb (unit=Mi), vcores]	<memory:1024, vCores:1>	<memory:8192, vCores:4>

Below these tables is a table showing application entries, with columns for ID, User, Name, Application Type, Queue, Application Priority, StartTime, FinishTime, State, FinalStatus, Running Containers, Allocated CPU Vcores, Allocated Memory MB, and Reserved Memory MB. The table is currently empty.

2. Hadoop install

- 맵 리듀스 example
- hadoop-env.sh 파일 활용

action server: an01

pwd: /home/hadoop/hadoop-3.1.2

hdfs dfs -ls /

hdfs dfs -mkdir /user

hdfs dfs -mkdir /user/hadoop

hdfs dfs -mkdir /user/hadoop/conf

hdfs dfs -put /home/hadoop/hadoop-3.1.2/etc/hadoop/hadoop-env.sh /user/hadoop/conf/ // 예제 파일 hdfs에 삽입

hdfs dfs -ls /user/hadoop/conf // 파일이 이동되었는지 조회

yarn jar /home/hadoop/hadoop-3.1.2/share/hadoop/mapreduce/hadoop-mapreduce-examples-3.1.2.jar wordcount
conf output // 맵 리듀스 활용 wordcount 실행

hdfs dfs -ls /user/hadoop/output/ // 결과 파일 생성 확인

hdfs dfs -cat /user/hadoop/output/part-r-00000 // 워드 카운트 결과 확인

```

[hadoop@an01 hadoop-3.1.2]$ hdfs dfs -cat /user/hadoop/output/part-r-00000
"AS      1
"License");      1
"log      1
#      304
##      12
###      28
#export 1
$USER    1
${HADOOP_HOME}/logs      1
${HOME}/.hadooprc      1
'-'      1
'.'      1
'hadoop 1
'mapred 1
'yarn   1
(       1
(ASF)   1
(BUT     1
(Java   2
(Note    1
(command)_(subcommand)_USER.      1
(e.g.,   1
(file/dir      1
(i.e.,   2
(period)      1
(primarily)   1
(such      1
(superficially) 1
(the      1
)        1
**MUST   1
**MUST**      1
*NOT*      1
+'%Y%m%d%H%M')" 2
--config)    1
--daemon     1
-Dcom.sun.management.jmxremote.authenticate=false      1
-Dcom.sun.management.jmxremote.port=1026"      1
-Dcom.sun.management.jmxremote.ssl=false      1
-Dhadoop.security.logger=foo).      1
-Dsun.security.krb5.debug=true      1
-Dsun.security.spnego.debug"      1
-XX:+PrintGCDateStamps      1
-XX:+PrintGCDateStamps"      1
-XX:+PrintGCDetails      2
-XX:+PrintGCTimeStamps      2
-Xloggc:${HADOOP_LOG_DIR}/gc-rm.log-${date      2
-Xms).      1
-Xmx).      1
-blah).      1
-f      1
-ls      1
-o      2
-s)}}      1

```




- 웹 페이지로 파일 확인 가능
- 상단 Utilities -> Browse the file system

Browsing HDFS



주요 알림 | 192.168.56.100:9870/explorer.html#/user/hadoop/output

Hadoop Overview Datanodes Datanode Volume Failures Snapshot Startup Progress Utilities

Browse Directory

/user/hadoop/output Go!   

Show 25 entries Search:

<input type="checkbox"/>	Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name	
<input type="checkbox"/>	-rw-r--r--	hadoop	supergroup	0 B	Jun 01 13:13	3	128 MB	_SUCCESS	
<input type="checkbox"/>	-rw-r--r--	hadoop	supergroup	9.58 KB	Jun 01 13:13	3	128 MB	part-r-00000	

Showing 1 to 2 of 2 entries

Previous 1 Next

Hadoop, 2018.

2. Hadoop install

- 하둡 클러스터 종료
- 시작의 역순으로 실행

action server: an01, sn01, rm01

pwd: /home/hadoop/hadoop-3.1.2

./sbin/stop-yarn.sh // rm01, 안 종료

./bin/hdfs --daemon stop zkfc // sn01, 주키퍼 장애 컨트롤러 종료

./bin/hdfs --daemon stop namenode // sn01, 스탠바이 네임노드 종료

./sbin/hadoop-daemons.sh stop datanode // an01, 데이터 노드 종료

./bin/hdfs --daemon stop zkfc // an01, 주키퍼 장애 컨트롤러 종료

./bin/hdfs --daemon stop namenode // an01, 액티브 네임노드 종료

./bin/hdfs --dameon stop journalnode // an01, sn01, rm01, 저널 노드 종료

2. Hadoop install

- 최초 실행 이후 두 번째 부터의 실행

action server: an01, sn01, rm01

pwd: /home/hadoop/hadoop-3.1.2

./bin/hdfs --daemon start journalnode // an01, sn01, rm01, 저널 노드 실행

./bin/hdfs --daemon start namenode // an01, 액티브 네임노드 실행

./bin/hdfs --daemon start zkfc // an01, 주키퍼 장애 컨트롤러 실행

./sbin/hadoop-daemons.sh start datanode // an01, 데이터 노드 실행

./bin/hdfs --daemon start namenode // sn01, 스탠바이 네임노드 실행

./bin/hdfs --daemon start zkfc // sn01, 주키퍼 장애 컨트롤러 실행

./sbin/start-yarn.sh // rm01, 안 실행