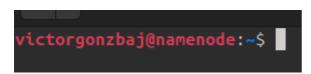
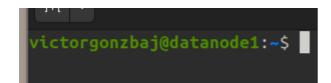
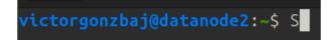
# **HDFS CLUSTER**

## Parte de preparacion del nodo

IPs y nombres de los hosts







Versión Java

```
javac 1.8.0_432
```

Fichero authorizes-keys de todos los hosts

```
| Monophermenters | Set | Set
```

Isblk de los nodos

## **Configuracion de Hadoop**

Ver variables HADOOP\_HOME y PATH del namenode

```
hdoop@namenode:~$ echo $HADOOP_HOME
/home/hdoop/hadoop-3.4.0
hdoop@namenode:~$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/home/hdoop/hadoop-3.4.0/sbin:/home/hdoop/hadoop-3.4.0/sbin:/home/hdoop/hadoop-3.4.0/sbin:/home/hdoop@namenode:~$
```

Configuración del archivo core-site.xml en cada nodo.

```
cconfiguration>
cconfiguration>
cconfiguration>
cproperty>
cproperty>
cproperty>
cproperty>
cproperty
cproperty
cproperty>
cproperty
cproperty
cproperty
cproperty>
cproper
```

### Namenode sin ser datanode

Configuración del archivo hdfs-site.xml en cada nodo.



Información del sistema hdfs, espacio disponible

### Overview 'namenode:9000' (~active)

Started:	Tue Feb 04 20:57:37 +0100 2025
Version:	3.4.0, rbd8b77f398f626bb7791783192ee7a5dfaeec760
Compiled:	Mon Mar 04 07:35:00 +0100 2024 by root from (HEAD detached at release-3.4.0-RC3)
Cluster ID:	CID-0a84a87e-39b0-449a-b650-3e5b9af34002
Block Pool ID:	BP-1317947451-192.168.1.1-1738613828265

## Summary

Security is off.

Safemode is off.

1 files and directories, 0 blocks (0 replicated blocks, 0 erasure coded block groups) = 1 total filesystem object(s).

Heap Memory used 202.15 MB of 262 MB Heap Memory. Max Heap Memory is 871.5 MB.

Non Heap Memory used 53.6 MB of 55.28 MB Committed Non Heap Memory. Max Non Heap Memory is <unbounded>.

Configured Capacity:	195.74 GB
Configured Remote Capacity:	0 B
DFS Used:	60 KB (0%)
Non DFS Used:	96 KB
DFS Remaining:	185.71 GB (94.88%)
Block Pool Used:	60 KB (0%)
DataNodes usages% (Min/Median/Max/stdDev):	0.00% / 0.00% / 0.00% / 0.00%
Live Nodes	2 (Decommissioned: 0, In Maintenance: 0)
Dead Nodes	0 (Decommissioned: 0, In Maintenance: 0)
Decommissioning Nodes	0
Entering Maintenance Nodes	0
Total Datanode Volume Failures	0 (0 B)
Number of Under-Replicated Blocks	0

Crear algunas carpetas y subir algún fichero grande a alguna de ellas

```
hdoop@namenode:~$ hdfs dfs -mkdir /prueba
hdoop@namenode:~$ hdfs dfs -put text.txt /
hdoop@namenode:~$ hdfs dfs -ls /
Found 2 items
drwxr-xr-x - hdoop supergroup 0 2025-02-04 21:05 /prueba
-rw-r--r-- 2 hdoop supergroup 2141520 2025-02-04 21:05 /text.txt
hdoop@namenode:~$
```

Mostrar la estructura y algún fichero con bloques replicados y en que nodos están



## Namenode siendo datanode

Mostrar archivo hdfs-site.xml de ese hosts. Mostrar archivo Workers.

```
<!-- Put site-specific property overrides in this file. -->
<configuration>
    property>
        <name>dfs.namenode.name.dir</name>
        <value>file:/mnt/data/hdfs/namenode</value>
    </property>
    property>
        <name>dfs.data.dir</name>
        <value>file:/mnt/data/hdfs/datanode</value>
    </property>
    property>
        <name>dfs.replication</name>
        <value>3</value>
    </property>
    <!--<pre><!--<pre><!--<pre>
        <name>dfs.hosts.exclude</name>
        <value>hadoop-3.4.0/etc/hadoop/noworkers</value>
    </property>-->
</configuration>
hdoop@namenode:~$
```

```
hdoop@namenode:~$ cat hadoop-3.4.0/etc/hadoop/workers namenode datanode1 datanode2
```

Eliminar el fichero de antes y volverlo a subir

```
hdoop@namenode:~$ hdfs dfs -rm /text.txt
Deleted /text.txt
hdoop@namenode:~$ hdfs dfs -put text.txt /
hdoop@namenode:~$
```

Mostrar de nuevo en un navegador los nodos activos y los bloques que ocupa el fichero

# Overview 'namenode:9000' (~active)

Started:	Tue Feb 04 21:11:48 +0100 2025
Version:	3.4.0, rbd8b77f398f626bb7791783192ee7a5dfaeec760
Compiled:	Mon Mar 04 07:35:00 +0100 2024 by root from (HEAD detached at release-3.4.0-RC3)
Cluster ID:	CID-0a84a87e-39b0-449a-b650-3e5b9af34002
Block Pool ID:	BP-1317947451-192.168.1.1-1738613828265

# Summary

Security is off.

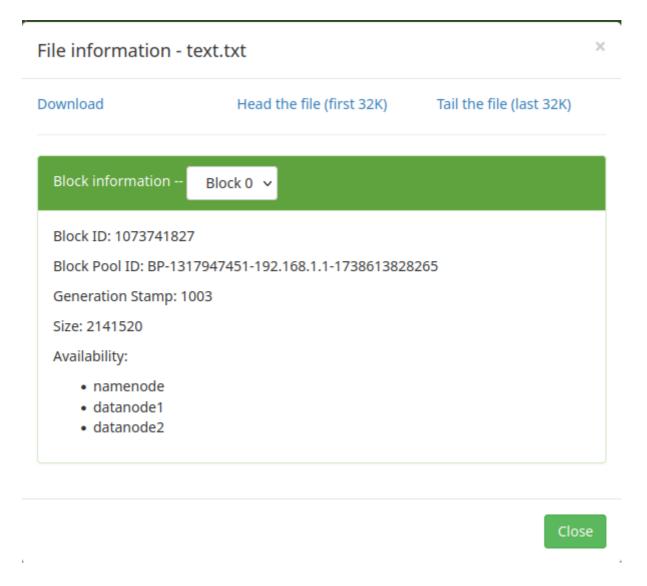
Safemode is off.

3 files and directories, 1 blocks (1 replicated blocks, 0 erasure coded block groups) = 4 total filesystem object(s).

Heap Memory used 168.76 MB of 233 MB Heap Memory. Max Heap Memory is 871.5 MB.

Non Heap Memory used 58.42 MB of 59.97 MB Committed Non Heap Memory. Max Non Heap Memory is <unbounded>.

Configured Capacity:	293.61 GB		
Configured Remote Capacity:	0 B		
DFS Used:	6.27 MB (0%)		
Non DFS Used:	5.22 MB		
DFS Remaining:	278.55 GB (94.87%)		
Block Pool Used:	6.27 MB (0%)		
DataNodes usages% (Min/Median/Max/stdDev):	0.00% / 0.00% / 0.00% / 0.00%		
Live Nodes	3 (Decommissioned: 0, In Maintenance: 0)		
Dead Nodes	0 (Decommissioned: 0, In Maintenance: 0)		
Decommissioning Nodes	0		
Entering Maintenance Nodes	0		
Total Datanode Volume Failures	0 (0 B)		



Modificar hdfs-site.xml para disminuir el tiempo de latencia de comprobación de nodos activos y mostrar esa configuración

```
property>
       <name>dfs.namenode.name.dir</name>
       <value>file:/mnt/data/hdfs/namenode</value>
   </property>
   property>
       <name>dfs.data.dir
       <value>file:/mnt/data/hdfs/datanode</value>
   </property>
   property>
       <name>dfs.replication</name>
       <value>3</value>
   </property>
   property>
       <name>dfs.namenode.heartbeat.recheck-interval
       <value>5000</value> <!--ms-->
   property>
       <name>dfs.heartbeat.interval</name>
       <value>3</value> <!--s-->
   </property>
   <!--<pre><!--<pre><!--<pre>
       <name>dfs.hosts.exclude</name>
       <value>hadoop-3.4.0/etc/hadoop/noworkers</value>
   </property>-->
</configuration>
hdoop@namenode:~$
```

Decomisar un host que no sea el namenode

```
</property>
   property>
       <name>dfs.replication</name>
       <value>3</value>
   </property>
   property>
       <name>dfs.namenode.heartbeat.recheck-interval
       <value>5000</value> <!--ms-->
   property>
       <name>dfs.heartbeat.interval</name>
       <value>3</value> <!--s-->
   </property>
   operty>
       <name>dfs.hosts.exclude</name>
       <value>hadoop-3.4.0/etc/hadoop/noworkers
   </property>
</configuration>
hdoop@namenode:~$ cat hadoop-3.4.0/etc/hadoop/noworkers
namenode
hdoop@namenode:~$
```

Mostrar en el navegador la nueva situación y como ha replicado los bloques de nuevos

#### Decommissioning

Node	Under replicated blocks	Blocks with no live replicas	Under Replicated Blocks In files under construction	Decommission duration
/default-rack/namenode:9866 (192.168.1.1:9866)	1	0	0	42587ms

