

```
PS C:\Users\Admin User> docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
hello-docker	latest	b6fd0f135754	5 days ago	133MB
dockerapp	1.1	78198ca40777	2 weeks ago	159MB
ubuntu	latest	59ab366372d5	5 weeks ago	78.1MB
nginx	latest	3b25b682ea82	6 weeks ago	192MB
alpine	latest	91ef0af61f39	2 months ago	7.8MB
hello-world	latest	d2c94e258dcb	18 months ago	13.3kB
bde2020/hadoop-namenode	latest	b638307a2119	4 years ago	1.37GB

```
PS C:\Users\Admin User>
```

```
PS C:\Users\Admin User> docker run -it --name hadoop-cluster -p 9870:9870 -p 8088:8088 -p 50070:50070 bde2020/hadoop-namenode:latest /bin/bash
```

```
Configuring core
```

```
- Setting fs.defaultFS=hdfs://07c2f64b580a:8020
```

```
Configuring hdfs
```

```
- Setting dfs.namenode.name.dir=file:///hadoop/dfs/name
```

```
Configuring yarn
```

```
Configuring httpfs
```

```
Configuring kms
```

```
Configuring mapred
```

```
Configuring for multihomed network
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```
root@07c2f64b580a:/#
```

```
root@07c2f64b580a:/# hdfs namenode -format
```

```
2024-11-18 08:19:53,380 INFO namenode.NameNode: STARTUP_MSG:
```

```
/*****
```

```
STARTUP_MSG: Starting NameNode
```

```
STARTUP_MSG: host = 07c2f64b580a/172.17.0.2
```

```
STARTUP_MSG: args = [-format]
```

```
STARTUP_MSG: version = 3.2.1
```

```
STARTUP_MSG: classpath = /etc/hadoop:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-logging-1.1.3.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/snappy-java-1.0.5.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/common-s-net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/failureaccess-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-math3-3.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/httpcore-4.4.10.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-annotations-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/woodstox-core-5.0.3.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jsr311-api-1.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/audience-annotations-0.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-core-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-collections-3.2.2.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-jaxrs-1.9.13.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/animal-sniffer-annotations-1.17.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/protobuf-java-2.
```

```
*****/
root@07c2f64b580a:/# hdfs namenode &
[1] 239
root@07c2f64b580a:/# 2024-11-18 08:22:31,077 INFO namenode.NameNode: STARTUP_MSG:
/*****
STARTUP_MSG: Starting NameNode
STARTUP_MSG: host = 07c2f64b580a/172.17.0.2
STARTUP_MSG: args = []
STARTUP_MSG: version = 3.2.1
STARTUP_MSG: classpath = /etc/hadoop:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-logging-1.1.3.jar:/opt/hadoop-3.2.1/share/hadoop/common
/lib/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/snappy-java-1.0.5.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/common
s-net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/failureaccess-1.0.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/commons-math3-3.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/s
hare/hadoop/common/lib/httpcore-4.4.10.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/common/
lib/jackson-annotations-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/woodstox-core-5.0.3.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/js
r311-api-1.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/audience-annotations-0.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-co
```

```
root@07c2f64b580a:/# hdfs datanode &
[2] 393
root@07c2f64b580a:/# 2024-11-18 08:24:48,494 INFO datanode.DataNode: STARTUP_MSG:
/*****
STARTUP_MSG: Starting DataNode
STARTUP_MSG: host = 07c2f64b580a/172.17.0.2
STARTUP_MSG: args = []
STARTUP_MSG: version = 3.2.1
STARTUP_MSG: classpath = /etc/hadoop:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-logging-1.1.3.jar:/opt/hadoop-3.2.1/share/hadoop/common
/lib/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/snappy-java-1.0.5.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/common
s-net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/failureaccess-1.0.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/commons-math3-3.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/s
hare/hadoop/common/lib/httpcore-4.4.10.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/common/
lib/jackson-annotations-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/woodstox-core-5.0.3.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/js
r311-api-1.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/audience-annotations-0.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-co
```

```
2024-11-18 08:24:51,745 INFO datanode.DataNode: Got finalize command for block pool BP-576603861-172.17.0.2-1731917994781
```

```
root@07c2f64b580a:/# yarn nodemanager &
[3] 533
root@07c2f64b580a:/# 2024-11-18 08:26:12,308 INFO nodemanager.NodeManager: STARTUP_MSG:
/*****
STARTUP_MSG: Starting NodeManager
STARTUP_MSG: host = 07c2f64b580a/172.17.0.2
STARTUP_MSG: args = []
STARTUP_MSG: version = 3.2.1
STARTUP_MSG: classpath = /etc/hadoop:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-logging-1.1.3.jar:/opt/hadoop-3.2.1/share/hadoop/common
/lib/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/snappy-java-1.0.5.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/common
s-net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/failureaccess-1.0.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/commons-math3-3.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/s
hare/hadoop/common/lib/httpcore-4.4.10.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/common/
lib/jackson-annotations-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/woodstox-core-5.0.3.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/js
```

```
root@07c2f64b580a:/# yarn resourcemanager &
[4] 707
root@07c2f64b580a:/# 2024-11-18 08:28:08,018 INFO resourcemanager.ResourceManager: STARTUP_MSG:
/*****
STARTUP_MSG: Starting ResourceManager
STARTUP_MSG: host = 07c2f64b580a/172.17.0.2
STARTUP_MSG: args = []
STARTUP_MSG: version = 3.2.1
STARTUP_MSG: classpath = /etc/hadoop:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-logging-1.1.3.jar:/opt/hadoop-3.2.1/share/hadoop/common
/lib/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/snappy-java-1.0.5.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/common
s-net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/failureaccess-1.0.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/commons-math3-3.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/s
hare/hadoop/common/lib/httpcore-4.4.10.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/common/
```

```
root@07c2f64b580a:/# hdfs dfs -mkdir -p /user/hadoop/input
2024-11-18 08:29:13,585 INFO namenode.FSEditLog: Number of transactions: 4 Total time for transactions(ms): 29 Number of transactions batched in
Syncs: 0 Number of syncs: 2 SyncTimes(ms): 10
root@07c2f64b580a:/#
```



```

Syncs: 0 Number of syncs: 2 SyncTimes(ms): 10
root@07c2f64b580a:/# hdfs dfs -put $HADOOP_HOME/etc/hadoop/*.* /user/hadoop/input
2024-11-18 08:30:08,513 INFO hdfs.StateChange: BLOCK* allocate blk_1073741825_1001, replicas=172.17.0.2:9866 for /user/hadoop/input/capacity-scheduler.xml..COPYING_
2024-11-18 08:30:08,550 INFO sasl.SaslDataTransferClient: SASL encryption trust check: localhostTrusted = false, remoteHostTrusted = false
2024-11-18 08:30:08,695 INFO datanode.DataNode: Receiving BP-576603861-172.17.0.2-1731917994781:blk_1073741825_1001 src: /172.17.0.2:48110 dest: /172.17.0.2:9866
2024-11-18 08:30:08,795 INFO DataNode.clienttrace: src: /172.17.0.2:48110, dest: /172.17.0.2:9866, bytes: 8260, op: HDFS_WRITE, cliID: DFSCClient_NONMAPREDUCE_-243331194_1, offset: 0, srvID: 7fe23d5f-75fb-4581-8b9c-41fcd4a98731, blockid: BP-576603861-172.17.0.2-1731917994781:blk_1073741825_1001, duration(ns): 18885256
2024-11-18 08:30:08,795 INFO datanode.DataNode: PacketResponder: BP-576603861-172.17.0.2-1731917994781:blk_1073741825_1001, type=LAST_IN_PIPELINE terminating
2024-11-18 08:30:08,813 INFO namenode.FSNamesystem: BLOCK* blk_1073741825_1001 is COMMITTED but not COMPLETE(numNodes= 0 < minimum = 1) in file

```

```

root@07c2f64b580a:/# hadoop jar $HADOOP_HOME/share/hadoop/mapreduce/hadoop-mapreduce-examples-*.jar wordcount /user/hadoop/input /user/hadoop/output
2024-11-18 08:32:54,102 INFO impl.MetricsConfig: Loaded properties from hadoop-metrics2.properties
2024-11-18 08:32:54,197 INFO impl.MetricsSystemImpl: Scheduled Metric snapshot period at 10 second(s).
2024-11-18 08:32:54,197 INFO impl.MetricsSystemImpl: JobTracker metrics system started
2024-11-18 08:32:54,612 INFO input.FileInputFormat: Total input files to process : 9
2024-11-18 08:32:54,658 INFO mapreduce.JobSubmitter: number of splits:9
2024-11-18 08:32:54,891 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_local230865451_0001
2024-11-18 08:32:54,891 INFO mapreduce.JobSubmitter: Executing with tokens: []
2024-11-18 08:32:55,039 INFO mapreduce.Job: The url to track the job: http://localhost:8080/
2024-11-18 08:32:55,040 INFO mapreduce.Job: Running job: job_local230865451_0001
2024-11-18 08:32:55,043 INFO mapred.LocalJobRunner: OutputCommitter set in config null
2024-11-18 08:32:55,054 INFO output.FileOutputCommitter: File OutputCommitter Algorithm version is 2
2024-11-18 08:32:55,054 INFO output.FileOutputCommitter: FileOutputCommitter skip cleanup _temporary folders under output directory:false, ignore cleanup failures: false
2024-11-18 08:32:55,055 INFO mapred.LocalJobRunner: OutputCommitter is org.apache.hadoop.mapreduce.lib.output.FileOutputCommitter

```

## Configuring for multihomed network

```

root@07c2f64b580a:/# start-all.sh
bash: start-all.sh: command not found
root@07c2f64b580a:/#

```

```

root@07c2f64b580a:/# hdfs dfs -cat /user/hadoop/output/part-r-00000
2024-11-18 08:35:22,130 INFO sasl.SaslDataTransferClient: SASL encryption trust check: localhostTrusted = false, remoteHostTrusted = false
"*"      21
"AS"      9
"License"); 9
"alice,bob 21
"clumping" 1
(ASF)    1
(root    1
(the     9
-->     18
-1       1
-1,      1
0.0      1
1-MAX_INT. 1
1.       1
1.0.     1
2.0      9
40       2
40+20=60 1
:        2
<!--    18

```