

ASSIGNMENT 02

Sabaragamuwa University of Sri Lanka

Faculty of Computing

Department of Software Engineering

SE6103 – Parallel & Distributed Systems

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Academic Period	: 03 rd Year 02 nd Semester
Degree Program	: Software Engineering
Due Date	: 25/11/2024

Compose yml file

```
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker
compose up -d
[+] Running 8/8
  ✓ historyserver Pulled 8.6s
  ✓ f3f6b02c1935 Download complete 1.1s
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker
compose up -d
[+] Running 8/8
  ✓ historyserver Pulled 8.6s
  ✓ f3f6b02c1935 Download complete 1.1s
  ✓ 78d381637ee0 Download complete 0.8s
  ✓ 84560426d8fd Download complete 1.2s
  ✓ datanode Pulled 12.8s
  ✓ 5e185246c615 Download complete 0.7s
  ✓ 4bf0ae3d5cc8 Download complete 1.1s
  ✓ b91d0b0b68c8 Download complete 1.1s
[+] Running 6/6
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker
compose up -d
[+] Running 8/8
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PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker
compose up -d
```

Compose up -d

```
  ✓ 4bf0ae3d5cc8 Download complete 1.1s
  ✓ b91d0b0b68c8 Download complete 1.1s
  ✓ b91d0b0b68c8 Download complete 1.1s
[+] Running 6/6
  ✓ Network lav-sheet-3_default Created 0.1s
  ✓ Volume "lav-sheet-3_datanode-data" Created 0.0s
  ✓ Volume "lav-sheet-3_namenode-data" Created 0.0s
  ✓ Container namenode Started 1.1s
  ✓ Container datanode Started 1.3s
  ✓ Container historyserver Started 1.6s
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> 
```

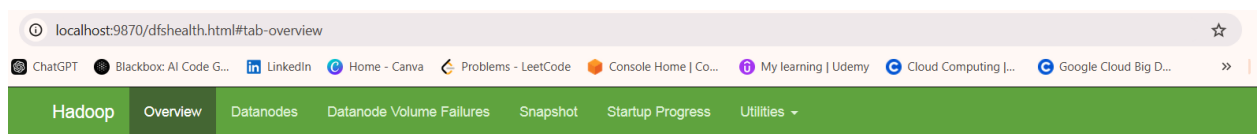
Display all running containers

```
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS
fbe79701cb21	bde2020/hadoop-historyserver:latest	"/entrypoint.sh /run..."	4 minutes ago	Up 4 minutes (healthy)
0d45b0dc9361	bde2020/hadoop-datanode:latest	"/entrypoint.sh /run..."	4 minutes ago	Up 4 minutes (healthy)
1b670735e1b3	bde2020/hadoop-namenode:latest	"/entrypoint.sh /run..."	4 minutes ago	Up 4 minutes (healthy)

```
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3>
```

http://localhost:9870



Overview 'namenode:8020' (active)

Started:	Mon Nov 25 20:54:32 +0530 2024
Version:	3.2.1, rb3cbbb467e22ea829b3808f4b7b01d07e0bf3842
Compiled:	Tue Sep 10 21:26:00 +0530 2019 by rohithsharmaks from branch-3.2.1
Cluster ID:	CID-f56a23cd-6e8a-4001-b70f-46791f6021ff
Block Pool ID:	BP-713633274-172.18.0.2-1732548270254

Copy sample text file to nodename:sample.txt

```
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker cp "L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3\sample.txt" namenode:/sample.txt
Successfully copied 2.05kB to namenode:/sample.txt
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3>
```

`docker exec -it namenode ls /`

```
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker exec -it namenode ls /
KEYS  entrypoint.sh  home  mnt  run  srv  var
bin   etc             lib   opt  run.sh  sys
boot  hadoop          lib64 proc  sample.txt  tmp
dev   hadoop-data     media root  sbin   usr
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3>
```

`docker exec -it namenode hdfs dfs -mkdir -p /input`

`docker exec -it namenode hdfs dfs -put /sample.txt /input`

`docker exec -it namenode hdfs dfs -ls /input`

```
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3>
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker exec -it namenode hdfs dfs -mkdir -p /input
Successfully copied 2.05kB to namenode:/sample.txt
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker cp sample.txt namenode:/sample.txt
2024-11-25 15:31:40,401 INFO sasl.SaslDataTransferClient: SASL encryption trust check: localhostTrusted = false, remoteHostTrusted = false
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker exec -it namenode hdfs dfs -ls /input
Found 1 items
-rw-r--r-- 3 root supergroup 79 2024-11-25 15:31 /input/sample.txt
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3>
```

```

PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Dis
tributed Systems\Practical\lav-sheet-3> docker exec -it namenode ls /
KEYS  entrypoint.sh  home  mnt  run          srv  var
bin   etc              lib   opt  run.sh       sys
boot  hadoop           lib64 proc  sample.txt   tmp
dev   hadoop-data      media root  sbin         usr
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Dis
tributed Systems\Practical\lav-sheet-3> docker exec -it namenode hdfs d
fs -mkdir -p /input
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Dis
tributed Systems\Practical\lav-sheet-3> docker exec -it namenode hdfs d
fs -put /sample.txt /input
put: `/input/sample.txt': File exists
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Dis
tributed Systems\Practical\lav-sheet-3> docker exec -it namenode hdfs d
fs -ls /input
Found 1 items
-rw-r--r--    3 root supergroup          79 2024-11-25 15:31 /input/sampl
e.txt
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Dis
tributed Systems\Practical\lav-sheet-3>

```

```
docker exec -it namenode hadoop jar /opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-examples-3.2.1.jar wordcount /input /output
```

```
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Dis
tributed Systems\Practical\lav-sheet-3> docker exec -it namenode hadoop
jar /opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-examples
-3.2.1.jar wordcount /input /output
2024-11-25 17:35:22,282 INFO impl.MetricsConfig: Loaded properties from
hadoop-metrics2.properties
2024-11-25 17:35:22,360 INFO impl.MetricsSystemImpl: Scheduled Metric s
napshot period at 10 second(s).
2024-11-25 17:35:22,360 INFO impl.MetricsSystemImpl: JobTracker metrics
system started
2024-11-25 17:35:22,771 INFO input.FileInputFormat: Total input files t
o process : 1
2024-11-25 17:35:22,859 INFO mapreduce.JobSubmitter: number of splits:1
2024-11-25 17:35:23,072 INFO mapreduce.JobSubmitter: Submitting tokens
for job: job_local485117995_0001
2024-11-25 17:35:23,073 INFO mapreduce.JobSubmitter: Executing with tok
ens: []
2024-11-25 17:35:23,218 INFO mapreduce.Job: The url to track the job: h
ttp://localhost:8080/
2024-11-25 17:35:23,220 INFO mapreduce.Job: Running job: job_local48511
7995_0001
2024-11-25 17:35:23,221 INFO mapred.LocalJobRunner: OutputCommitter set
in config null
2024-11-25 17:35:23,232 INFO output.FileOutputCommitter: File Output Co
mmitter Algorithm version is 2
2024-11-25 17:35:23,233 INFO output.FileOutputCommitter: FileOutputComm
itter skip cleanup _temporary folders under output directory:false, ign
```

> OU

> TIM

```
docker exec -it namenode hdfs dfs -ls /output
```

```
bytes written=52
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Dis
tributed Systems\Practical\lav-sheet-3> docker exec -it namenode hdfs d
fs -ls /output
Found 2 items
-rw-r--r--    3 root supergroup          0 2024-11-25 17:35 /output/_SUC
CESS
-rw-r--r--    3 root supergroup       92 2024-11-25 17:35 /output/part
-r-00000
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Dis
tributed Systems\Practical\lav-sheet-3>
```

```
docker exec -it namenode hdfs dfs -cat /output/part-r-00000
```

```
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Dis
tributed Systems\Practical\lav-sheet-3> docker exec -it namenode hdfs d
fs -cat /output/part-r-00000
2024-11-25 17:36:56,493 INFO sasl.SaslDataTransferClient: SASL encrypti
on trust check: localhostTrusted = false, remoteHostTrusted = false
Big      1
Hadoop   1
This     1
a        2
data     1
file.    1
fun.     1
is       3
powerful      1
processing    1
test         1
tool.        1
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Dis
tributed Systems\Practical\lav-sheet-3>
```

docker-compose down

```
PS L:\Sabragauwa.lk\6th semester\Lecture slides\SE6103 Parallel and Distributed Systems\Practical\lav-sheet-3> docker-compose down
[+] Running 4/4
 ✓ Container historyserver      Removed
 ✓ Container datanode           Removed
 ✓ Container namenode           Removed
 ✓ Network lav-sheet-3_default  Removed
```