МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РФ

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ «ЛИПЕЦКИЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ»

Институт   компьютерных наук
Кафедра   автоматизированных систем управления

Лабораторная работа №2

по дисциплине «Теория обработки больших массивов данных»

Студент   М-РИТ-25   _____   Станиславчук С. М.

(подпись, дата)

Руководитель

Доцент, к.т.н.   _____   Тюрин А. С.

(подпись, дата)

Липецк 2025

Содержание

2

1. Задание кафедры

Протестировать работоспособность конфига docker-compose, реализующего работу HDFS с помощью тестового скрипта python. В результате программа должна отобразить содержимое файла.

Цель: протестировать кооперативную работу датанодов и неймноды путем запуска Python-скрипта (теста) внутри контейнера.

2. Ход работы

** В ходе выполнения работы использовалось ядро GNU/Linux v6.15.4, Docker v28.3.0, Spark v3.5.4, OpenJDK v17.0.14, Python v3.12.9 **

Краткий разбор docker-compose.yml

Конфигурация нейм-ноды:
```
namenode:
  image: bde2020/hadoop-namenode:2.0.0-hadoop3.2.1-java8
  container_name: namenode
  hostname: namenode
  ports:
    - "9870:9870"  # Web UI
    - "9000:9000"  # RPC port
  environment:
    - CLUSTER_NAME=hadoop-cluster
    - CORE_CONF_fs_defaultFS=hdfs://namenode:9000        # URL для HDFS по умолчанию
  volumes:
    - namenode-data:/hadoop/dfs/name
  restart: unless-stopped
```
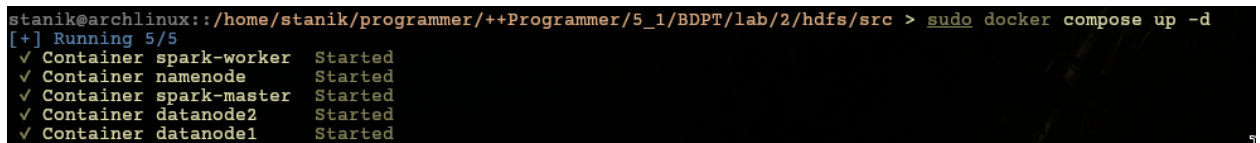
Конфигурация датаноды1:
```
datanode1:
image: bde2020/hadoop-datanode:2.0.0-hadoop3.2.1-java8
container_name: datanode1
hostname: datanode1
environment:
  - CORE_CONF_fs_defaultFS=hdfs://namenode:9000        # Namenode master
  - HDFS_CONF_dfs.client.use.datanode.hostname=false
ports:
  - "9864:9864"
volumes:
```

```
      - datanode1-data:/hadoop/dfs/data
   depends_on:
      - namenode
   restart: unless-stopped
```

Конфигурация датаноды2:

```
datanode2:
   image: bde2020/hadoop-datanode:2.0.0-hadoop3.2.1-java8
   container_name: datanode2
   hostname: datanode2
   environment:
      - CORE_CONF_fs_defaultFS=hdfs://namenode:9000
      - HDFS_CONF_dfs.client.use.datanode.hostname=false
   volumes:
      - datanode2-data:/hadoop/dfs/data
   depends_on:
      - namenode
   ports:
      - "9865:9864"
   restart: unless-stopped
```

Следующий шаг: запустить три контейнера для HDFS. Спарк контейнеры
необязательны. Запуск представлен на рис. 1

Рисунок 1 — Выполнение команды up

Python-скрипт, который будет передан мастеру и в следствие выполнит
прямой запрос к Namenode через WebHDFS порт. Это тест-скрипт, который
создает директорию «/test» и записываем туда «.json» файл с данными, после
чего читает файлы в директории и выводит содержимое созданного файла
Сам скрипт можно запускать локально. Запуск скрипта представлен на
рисунке 2. Изначально на этом моменте скрпиту не получалось
присоединиться к WebHDFS. Это исправилось после добавления в
«/etc/hosts» строчку «127.0.0.1 datanode1 datanode2» (проброс портов). Из-за
того, что скрипт обращается не к localhost (127.0.0.1), а куда-то в другое
место. После добавления алиаса проблема решилась.

4

Рисунок 2 — Запуск скрипта

Анализируя результат первых логов, была выявлена некритическая ошибка:

«`/entrypoint.sh: line 28: HDFS_CONF_dfs.client.use.datanode.hostname: bad substitution`». Ошибка чисто синтаксическая, из-за неправильно заданного поля конфига докера. Надо изменить в каждом датаконтейнере поле

`HDFS_CONF_dfs.client.use.datanode.hostname=false`

на

`HDFS_CONF_dfs__client__use__datanode__hostname=false`

Возможно, именно данная ошибка способствовала крашу java на namenode. После исправления конфига, ошибка исчезла и неймнода более не крашилась после тестов.

Скриншоты WebUI для namenode, datanode1 и datanode2 представлены на рисунках 3-5.

Рисунок 3 — WebUI namenode

Рисунок 4 — WebUI datanode1

Рисунок 5 — WebUI datanode2

Полный результат (логи) приведены в приложениях 3-5.

3. Вывод

В ходе выполненной работы были запущены докер-контейнеры с datanode и namenode, был выполнен python-скрипт и проанализированы результаты его выполнения.

Приложение 1. docker-compose.yml

```yaml
services:
  spark-master:
    image: bitnami/spark:3.5.4
    container_name: spark-master
    environment:
      - SPARK_MODE=master
      - SPARK_RPC_AUTHENTICATION_ENABLED=no
      - SPARK_RPC_ENCRYPTION_ENABLED=no
      - SPARK_LOCAL_STORAGE_ENCRYPTION_ENABLED=no
      - SPARK_SSL_ENABLED=no
      - SPARK_MASTER_HOST=spark-master
    ports:
      - "8080:8080"
      - "7077:7077"
    networks:
      - spark-net

  spark-worker:
    image: bitnami/spark:3.5.4
    container_name: spark-worker
    environment:
      - SPARK_MODE=worker
      - SPARK_MASTER_URL=spark://spark-master:7077
      - SPARK_WORKER_CORES=1
      - SPARK_WORKER_MEMORY=1g
      - SPARK_WORKER_WEBUI_PORT=8081
    ports:
      - "8081:8081"
    depends_on:
      - spark-master
    networks:
      - spark-net

  namenode:
    image: bde2020/hadoop-namenode:2.0.0-hadoop3.2.1-java8
    container_name: namenode
    hostname: namenode
    ports:
      - "9870:9870"  # Web UI
      - "9000:9000"  # RPC port
    environment:
      - CLUSTER_NAME=hadoop-cluster
      - CORE_CONF_fs_defaultFS=hdfs://namenode:9000
    volumes:
      - namenode-data:/hadoop/dfs/name
    restart: unless-stopped

  datanode1:
    image: bde2020/hadoop-datanode:2.0.0-hadoop3.2.1-java8
    container_name: datanode1
    hostname: datanode1
    environment:
      - CORE_CONF_fs_defaultFS=hdfs://namenode:9000
      - HDFS_CONF_dfs__client__use__datanode__hostname=false
    ports:
      - "9864:9864"
```

```yaml
    volumes:
      - datanode1-data:/hadoop/dfs/data
    depends_on:
      - namenode
    restart: unless-stopped

  datanode2:
    image: bde2020/hadoop-datanode:2.0.0-hadoop3.2.1-java8
    container_name: datanode2
    hostname: datanode2
    environment:
      - CORE_CONF_fs_defaultFS=hdfs://namenode:9000
      - HDFS_CONF_dfs__client__use__datanode__hostname=false
    volumes:
      - datanode2-data:/hadoop/dfs/data
    depends_on:
      - namenode
    ports:
      - "9865:9864"
    restart: unless-stopped

volumes:
  namenode-data:
  datanode1-data:
  datanode2-data:

networks:
  spark-net:
    driver: bridge
    ipam:
      config:
        - subnet: 172.20.0.0/16
```

Приложение 2. Python-скрипт

```python
from hdfs import InsecureClient
import json

# Подключение напрямую к NameNode через WebHDFS порт
client = InsecureClient('http://localhost:9870', user='root')

# Генерация тестовых данных
data = [
    {"name": "Alice", "age": 25, "city": "Moscow"},
    {"name": "Bob", "age": 30, "city": "SPb"},
    {"name": "Charlie", "age": 35, "city": "Kazan"}
]

try:
    # Создаем директорию
    client.makedirs('/test', permission='755')

    # Записываем файл
    with client.write('/test/simple_data.json', encoding='utf-8', overwrite=True) as writer:
```

10

```python
        writer.write(json.dumps(data, indent=2))

    print("  Файл успешно записан в HDFS")


    # Читаем список файлов
    print("\n  Содержимое корневой директории:")
    for item in client.list('/', status=True):
        name = item[0]
        item_type = "  DIR" if item[1]['type'] == 'directory' else "  FILE"
        size = item[1]['length']
        print(f"{item_type}\t{size:>8} bytes\t/{name}")


    # Читаем файл обратно
    print("\n  Содержимое файла:")
    with client.read('/test/simple_data.json', encoding='utf-8') as reader:
        content = reader.read()
        print(content)


except Exception as e:
    print(f"  Ошибка: {e}")
    print("Проверьте:")
    print("1. Запущен ли HDFS: docker-compose ps")
    print("2. Доступен ли WebUI: http://localhost:9870")
    print("3. Правильный ли порт NameNode")
```

Приложение 3. Лог выполнения datanode2

```
Configuring core
 - Setting fs.defaultFS=hdfs://namenode:9000
Configuring hdfs
 - Setting dfs.datanode.data.dir=file:///hadoop/dfs/data
/entrypoint.sh: line 28: HDFS_CONF_dfs.client.use.datanode.hostname: bad substitution
Configuring yarn
Configuring httpfs
Configuring kms
Configuring mapred
Configuring for multihomed network
2025-09-23 18:51:56,142 INFO datanode.DataNode: STARTUP_MSG:
/************************************************************
STARTUP_MSG: Starting DataNode
STARTUP_MSG:   host = datanode2/172.19.0.4
STARTUP_MSG:   args = []
STARTUP_MSG:   version = 3.2.1
STARTUP_MSG:   classpath = /etc/hadoop:/opt/hadoop-3.2.1/share/hadoop/common/lib/re2j-1.1.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-servlet-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/jersey-core-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/hadoop-
auth-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/asm-5.0.4.jar:/opt/hadoop-3.2.1/share/
hadoop/common/lib/kerby-asn1-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/j2objc-
annotations-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-mapper-asl-1.9.13.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/jsch-0.1.54.jar:/opt/hadoop-3.2.1/share/hadoop/common/
lib/jetty-http-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/htrace-core4-4.1.0-
incubating.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-server-1.0.1.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/curator-recipes-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jul-to-
slf4j-1.7.25.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-io-2.5.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/kerb-admin-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-
text-1.4.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/accessors-smart-1.2.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/
log4j-1.2.17.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-xc-1.9.13.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/kerby-pkix-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/
lib/commons-codec-1.11.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/javax.servlet-
api-3.1.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/nimbus-jose-jwt-4.41.1.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/commons-compress-1.18.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/jackson-core-
asl-1.9.13.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/kerb-crypto-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/kerb-simplekdc-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jsr305-3.0.0.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/commons-configuration2-2.1.1.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/failureaccess-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/
avro-1.7.7.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-core-1.0.1.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/jettison-1.1.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/paranamer-2.3.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/protobuf-java-2.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/jetty-util-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerby-
config-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/checker-qual-2.5.2.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/jetty-security-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/httpcore-4.4.10.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/
```

error_prone_annotations-2.2.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/token-provider-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-webapp-9.3.24.v20180605.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/kerb-identity-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-servlet-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/curator-client-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-logging-1.1.3.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-beanutils-1.9.3.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/netty-3.10.5.Final.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/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/slf4j-api-1.7.25.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/hadoop-annotations-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jaxb-api-2.2.11.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/stax2-api-3.1.4.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/httpclient-4.5.6.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-util-1.0.1.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/commons-lang3-3.7.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/kerby-util-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-io-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-databind-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jsp-api-2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-common-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-xml-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/slf4j-log4j12-1.7.25.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jaxb-impl-2.2.3-1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-client-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/json-smart-2.3.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-json-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/metrics-core-3.2.4.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-cli-1.2.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/guava-27.0-jre.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-server-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/curator-framework-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/gson-2.2.4.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerby-xdr-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/hadoop-common-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/common/hadoop-nfs-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/hadoop-kms-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/hadoop-common-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/re2j-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-servlet-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-core-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/hadoop-auth-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/asm-5.0.4.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-asn1-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/j2objc-annotations-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-mapper-asl-1.9.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jsch-0.1.54.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-http-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/htrace-core4-4.1.0-incubating.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-server-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-collections-3.2.2.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/okio-1.6.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/curator-recipes-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-io-2.5.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-admin-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-text-1.4.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/accessors-smart-1.2.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/log4j-1.2.17.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-xc-1.9.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-pkix-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-codec-1.11.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/javax.servlet-api-3.1.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/nimbus-jose-jwt-4.41.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-compress-1.18.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-math3-3.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-core-asl-1.9.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/audience-annotations-0.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-crypto-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-simplekdc-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/netty-all-4.0.52.Final.jar:/opt/hadoop-3.2.1/share/hadoop/

hdfs/lib/jsr305-3.0.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-configuration2-2.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/failureaccess-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/avro-1.7.7.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-core-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jettison-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/animal-sniffer-annotations-1.17.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/paranamer-2.3.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/protobuf-java-2.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-util-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-config-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/okhttp-2.7.5.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/checker-qual-2.5.2.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-util-ajax-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-security-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/httpcore-4.4.10.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/error_prone_annotations-2.2.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/token-provider-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-webapp-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-jaxrs-1.9.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-identity-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-servlet-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/curator-client-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-logging-1.1.3.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-beanutils-1.9.3.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-annotations-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/netty-3.10.5.Final.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-core-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/leveldbjni-all-1.8.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/hadoop-annotations-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jaxb-api-2.2.11.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/json-simple-1.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/stax2-api-3.1.4.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/snappy-java-1.0.5.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/httpclient-4.5.6.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-util-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jsr311-api-1.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-daemon-1.0.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-lang3-3.7.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/woodstox-core-5.0.3.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-util-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-io-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-databind-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-common-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-xml-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jaxb-impl-2.2.3-1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-client-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/json-smart-2.3.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-json-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-cli-1.2.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/guava-27.0-jre.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-server-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/curator-framework-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/gson-2.2.4.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-xdr-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-native-client-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-rbf-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-client-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-client-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-rbf-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-nfs-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-httpfs-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-native-client-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/lib/hamcrest-core-1.3.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/lib/junit-4.11.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-nativetask-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-hs-plugins-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-app-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-shuffle-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-jobclient-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-common-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-hs-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-uploader-3.2.1.jar:/opt/

14

hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-jobclient-3.2.1-tests.jar:/opt/
hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-core-3.2.1.jar:/opt/hadoop-3.2.1/
share/hadoop/mapreduce/hadoop-mapreduce-examples-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn:/
opt/hadoop-3.2.1/share/hadoop/yarn/lib/geronimo-jcache_1.0_spec-1.0-alpha-1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/bcpkix-jdk15on-1.60.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
lib/javax.inject-1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/jackson-module-jaxb-
annotations-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/jackson-jaxrs-json-
provider-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/snakeyaml-1.16.jar:/opt/hadoop-3.2.1/
share/hadoop/yarn/lib/java-util-1.9.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/
objenesis-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/guice-4.0.jar:/opt/hadoop-3.2.1/share/
hadoop/yarn/lib/jersey-guice-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/guice-
servlet-4.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/mssql-jdbc-6.2.1.jre7.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/json-io-2.5.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/
fst-2.50.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/swagger-annotations-1.5.4.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/jackson-jaxrs-base-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/
yarn/lib/ehcache-3.3.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/bcprov-jdk15on-1.60.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/metrics-core-3.2.4.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
lib/aopalliance-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/HikariCP-java7-2.4.12.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/jersey-client-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
hadoop-yarn-server-tests-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-applications-
unmanaged-am-launcher-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-
router-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-common-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-timeline-pluginstorage-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-client-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
hadoop-yarn-services-api-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-web-
proxy-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-api-3.2.1.jar:/opt/hadoop-3.2.1/
share/hadoop/yarn/hadoop-yarn-server-applicationhistoryservice-3.2.1.jar:/opt/hadoop-3.2.1/
share/hadoop/yarn/hadoop-yarn-applications-distributedshell-3.2.1.jar:/opt/hadoop-3.2.1/share/
hadoop/yarn/hadoop-yarn-submarine-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-
services-core-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-registry-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-nodemanager-3.2.1.jar:/opt/hadoop-3.2.1/share/
hadoop/yarn/hadoop-yarn-server-resourcemanager-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
hadoop-yarn-server-common-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-
sharedcachemanager-3.2.1.jar
STARTUP_MSG: build = https://gitbox.apache.org/repos/asf/hadoop.git -r
b3cbbb467e22ea829b3808f4b7b01d07e0bf3842; compiled by 'rohithsharmaks' on 2019-09-10T15:56Z
STARTUP_MSG: java = 1.8.0_232
**/
2025-09-23 18:51:56,154 INFO datanode.DataNode: registered UNIX signal handlers for [TERM, HUP,
INT]
2025-09-23 18:51:56,658 INFO checker.ThrottledAsyncChecker: Scheduling a check for
[DISK]file:/hadoop/dfs/data
2025-09-23 18:51:56,793 INFO impl.MetricsConfig: Loaded properties from hadoop-
metrics2.properties
2025-09-23 18:51:56,881 INFO impl.MetricsSystemImpl: Scheduled Metric snapshot period at 10
second(s).
2025-09-23 18:51:56,881 INFO impl.MetricsSystemImpl: DataNode metrics system started
2025-09-23 18:51:57,082 INFO common.Util: dfs.datanode.fileio.profiling.sampling.percentage set
to 0. Disabling file IO profiling
2025-09-23 18:51:57,086 INFO datanode.BlockScanner: Initialized block scanner with
targetBytesPerSec 1048576
2025-09-23 18:51:57,094 INFO datanode.DataNode: Configured hostname is datanode2
2025-09-23 18:51:57,095 INFO common.Util: dfs.datanode.fileio.profiling.sampling.percentage set
to 0. Disabling file IO profiling
2025-09-23 18:51:57,099 INFO datanode.DataNode: Starting DataNode with maxLockedMemory = 0
2025-09-23 18:51:57,127 INFO datanode.DataNode: Opened streaming server at /0.0.0.0:9866
2025-09-23 18:51:57,131 INFO datanode.DataNode: Balancing bandwidth is 10485760 bytes/s
2025-09-23 18:51:57,131 INFO datanode.DataNode: Number threads for balancing is 50
2025-09-23 18:51:57,193 INFO util.log: Logging initialized @1645ms

```
2025-09-23 18:51:57,338 INFO server.AuthenticationFilter: Unable to initialize
FileSignerSecretProvider, falling back to use random secrets.
2025-09-23 18:51:57,343 INFO http.HttpRequestLog: Http request log for http.requests.datanode is
not defined
2025-09-23 18:51:57,370 INFO http.HttpServer2: Added global filter 'safety'
(class=org.apache.hadoop.http.HttpServer2$QuotingInputFilter)
2025-09-23 18:51:57,372 INFO http.HttpServer2: Added filter static_user_filter
(class=org.apache.hadoop.http.lib.StaticUserWebFilter$StaticUserFilter) to context datanode
2025-09-23 18:51:57,372 INFO http.HttpServer2: Added filter static_user_filter
(class=org.apache.hadoop.http.lib.StaticUserWebFilter$StaticUserFilter) to context logs
2025-09-23 18:51:57,373 INFO http.HttpServer2: Added filter static_user_filter
(class=org.apache.hadoop.http.lib.StaticUserWebFilter$StaticUserFilter) to context static
2025-09-23 18:51:57,398 INFO http.HttpServer2: Jetty bound to port 36541
2025-09-23 18:51:57,400 INFO server.Server: jetty-9.3.24.v20180605, build timestamp: 2018-06-
05T17:11:56Z, git hash: 84205aa28f11a4f31f2a3b86d1bba2cc8ab69827
2025-09-23 18:51:57,435 INFO handler.ContextHandler: Started
o.e.j.s.ServletContextHandler@6bb4dd34{/logs,file:///opt/hadoop-3.2.1/logs/,AVAILABLE}
2025-09-23 18:51:57,436 INFO handler.ContextHandler: Started
o.e.j.s.ServletContextHandler@45efd90f{/static,file:///opt/hadoop-3.2.1/share/hadoop/hdfs/
webapps/static/,AVAILABLE}
2025-09-23 18:51:57,531 INFO handler.ContextHandler: Started
o.e.j.w.WebAppContext@58594a11{/,file:///opt/hadoop-3.2.1/share/hadoop/hdfs/webapps/
datanode/,AVAILABLE}{/datanode}
2025-09-23 18:51:57,541 INFO server.AbstractConnector: Started ServerConnector@12a94400{HTTP/1.1,
[http/1.1]}{localhost:36541}
2025-09-23 18:51:57,541 INFO server.Server: Started @1993ms
2025-09-23 18:51:57,808 INFO web.DatanodeHttpServer: Listening HTTP traffic on /0.0.0.0:9864
2025-09-23 18:51:57,817 INFO util.JvmPauseMonitor: Starting JVM pause monitor
2025-09-23 18:51:57,820 INFO datanode.DataNode: dnUserName = root
2025-09-23 18:51:57,820 INFO datanode.DataNode: supergroup = supergroup
2025-09-23 18:51:57,902 INFO ipc.CallQueueManager: Using callQueue: class
java.util.concurrent.LinkedBlockingQueue, queueCapacity: 1000, scheduler: class
org.apache.hadoop.ipc.DefaultRpcScheduler, ipcBackoff: false.
2025-09-23 18:51:57,926 INFO ipc.Server: Starting Socket Reader #1 for port 9867
2025-09-23 18:51:58,233 INFO datanode.DataNode: Opened IPC server at /0.0.0.0:9867
2025-09-23 18:51:58,251 INFO datanode.DataNode: Refresh request received for nameservices: null
2025-09-23 18:51:58,261 INFO datanode.DataNode: Starting BPOfferServices for nameservices:
<default>
2025-09-23 18:51:58,274 INFO datanode.DataNode: Block pool <registering> (Datanode Uuid
unassigned) service to namenode/172.19.0.2:9000 starting to offer service
2025-09-23 18:51:58,280 INFO ipc.Server: IPC Server listener on 9867: starting
2025-09-23 18:51:58,280 INFO ipc.Server: IPC Server Responder: starting
2025-09-23 18:51:59,384 INFO ipc.Client: Retrying connect to server: namenode/172.19.0.2:9000.
Already tried 0 time(s); retry policy is RetryUpToMaximumCountWithFixedSleep(maxRetries=10,
sleepTime=1000 MILLISECONDS)
2025-09-23 18:52:00,385 INFO ipc.Client: Retrying connect to server: namenode/172.19.0.2:9000.
Already tried 1 time(s); retry policy is RetryUpToMaximumCountWithFixedSleep(maxRetries=10,
sleepTime=1000 MILLISECONDS)
2025-09-23 18:52:00,497 INFO datanode.DataNode: Acknowledging ACTIVE Namenode during
handshakeBlock pool <registering> (Datanode Uuid unassigned) service to namenode/172.19.0.2:9000
2025-09-23 18:52:00,499 INFO common.Storage: Using 1 threads to upgrade data directories
(dfs.datanode.parallel.volumes.load.threads.num=1, dataDirs=1)
2025-09-23 18:52:00,506 INFO common.Storage: Lock on /hadoop/dfs/data/in_use.lock acquired by
nodename 89@datanode2
2025-09-23 18:52:00,508 INFO common.Storage: Storage directory with location
[DISK]file:/hadoop/dfs/data is not formatted for namespace 1853864144. Formatting...
2025-09-23 18:52:00,508 INFO common.Storage: Generated new storageID DS-7f847090-8ed8-4b75-
81ce-0fc226a064ce for directory /hadoop/dfs/data
2025-09-23 18:52:00,534 INFO common.Storage: Analyzing storage directories for bpid BP-402907324-
```

172.19.0.2-1758653517014
2025-09-23 18:52:00,534 INFO common.Storage: Locking is disabled for
/hadoop/dfs/data/current/BP-402907324-172.19.0.2-1758653517014
2025-09-23 18:52:00,535 INFO common.Storage: Block pool storage directory for location
[DISK]file:/hadoop/dfs/data and block pool id BP-402907324-172.19.0.2-1758653517014 is not
formatted. Formatting ...
2025-09-23 18:52:00,535 INFO common.Storage: Formatting block pool BP-402907324-172.19.0.2-
1758653517014 directory /hadoop/dfs/data/current/BP-402907324-172.19.0.2-1758653517014/current
2025-09-23 18:52:00,544 INFO datanode.DataNode: Setting up storage:
nsid=1853864144;bpid=BP-402907324-172.19.0.2-1758653517014;lv=-57;nsInfo=lv=-65;cid=CID-931c6537-
8fbe-4bcc-b3f4-0efd4406b052;nsid=1853864144;c=1758653517014;bpid=BP-402907324-172.19.0.2-
1758653517014;dnuuid=null
2025-09-23 18:52:00,549 INFO datanode.DataNode: Generated and persisted new Datanode UUID
ddffe429-6254-462b-912a-4dee1d91300f
2025-09-23 18:52:00,660 INFO impl.FsDatasetImpl: Added new volume: DS-7f847090-8ed8-4b75-
81ce-0fc226a064ce
2025-09-23 18:52:00,660 INFO impl.FsDatasetImpl: Added volume - [DISK]file:/hadoop/dfs/data,
StorageType: DISK
2025-09-23 18:52:00,664 INFO impl.FsDatasetImpl: Registered FSDatasetState MBean
2025-09-23 18:52:00,671 INFO checker.ThrottledAsyncChecker: Scheduling a check for
/hadoop/dfs/data
2025-09-23 18:52:00,679 INFO checker.DatasetVolumeChecker: Scheduled health check for volume
/hadoop/dfs/data
2025-09-23 18:52:00,681 INFO impl.FsDatasetImpl: Adding block pool BP-402907324-172.19.0.2-
1758653517014
2025-09-23 18:52:00,681 INFO impl.FsDatasetImpl: Scanning block pool BP-402907324-172.19.0.2-
1758653517014 on volume /hadoop/dfs/data...
2025-09-23 18:52:00,707 INFO impl.FsDatasetImpl: Time taken to scan block pool BP-402907324-
172.19.0.2-1758653517014 on /hadoop/dfs/data: 26ms
2025-09-23 18:52:00,708 INFO impl.FsDatasetImpl: Total time to scan all replicas for block pool
BP-402907324-172.19.0.2-1758653517014: 27ms
2025-09-23 18:52:00,709 INFO impl.FsDatasetImpl: Adding replicas to map for block pool
BP-402907324-172.19.0.2-1758653517014 on volume /hadoop/dfs/data...
2025-09-23 18:52:00,709 INFO impl.BlockPoolSlice: Replica Cache file:
/hadoop/dfs/data/current/BP-402907324-172.19.0.2-1758653517014/current/replicas doesn't exist
2025-09-23 18:52:00,710 INFO impl.FsDatasetImpl: Time to add replicas to map for block pool
BP-402907324-172.19.0.2-1758653517014 on volume /hadoop/dfs/data: 1ms
2025-09-23 18:52:00,710 INFO impl.FsDatasetImpl: Total time to add all replicas to map for block
pool BP-402907324-172.19.0.2-1758653517014: 2ms
2025-09-23 18:52:00,712 INFO datanode.VolumeScanner: Now scanning bpid BP-402907324-172.19.0.2-
1758653517014 on volume /hadoop/dfs/data
2025-09-23 18:52:00,714 INFO datanode.VolumeScanner: VolumeScanner(/hadoop/dfs/data, DS-7f847090-
8ed8-4b75-81ce-0fc226a064ce): finished scanning block pool BP-402907324-172.19.0.2-1758653517014
2025-09-23 18:52:00,730 INFO datanode.VolumeScanner: VolumeScanner(/hadoop/dfs/data, DS-7f847090-
8ed8-4b75-81ce-0fc226a064ce): no suitable block pools found to scan. Waiting 1814399982 ms.
2025-09-23 18:52:00,734 INFO datanode.DirectoryScanner: Periodic Directory Tree Verification scan
starting at 9/23/25 8:24 PM with interval of 21600000ms
2025-09-23 18:52:00,740 INFO datanode.DataNode: Block pool BP-402907324-172.19.0.2-1758653517014
(Datanode Uuid ddffe429-6254-462b-912a-4dee1d91300f) service to namenode/172.19.0.2:9000
beginning handshake with NN
2025-09-23 18:52:00,786 INFO datanode.DataNode: Block pool Block pool BP-402907324-172.19.0.2-
1758653517014 (Datanode Uuid ddffe429-6254-462b-912a-4dee1d91300f) service to
namenode/172.19.0.2:9000 successfully registered with NN
2025-09-23 18:52:00,786 INFO datanode.DataNode: For namenode namenode/172.19.0.2:9000 using
BLOCKREPORT_INTERVAL of 21600000msec CACHEREPORT_INTERVAL of 10000msec Initial delay: 0msec;
heartBeatInterval=3000
2025-09-23 18:52:00,923 INFO datanode.DataNode: Successfully sent block report
0xb8cc0cefef3607f1, containing 1 storage report(s), of which we sent 1. The reports had 0 total
blocks and used 1 RPC(s). This took 3 msec to generate and 51 msecs for RPC and NN processing.

17

```
Got back one command: FinalizeCommand/5.
2025-09-23 18:52:00,923 INFO datanode.DataNode: Got finalize command for block pool BP-402907324-
172.19.0.2-1758653517014
2025-09-23 19:03:44,990 INFO datanode.DataNode: Receiving BP-402907324-172.19.0.2-
1758653517014:blk_1073741825_1001 src: /172.19.0.3:32824 dest: /172.19.0.4:9866
2025-09-23 19:03:45,033 INFO DataNode.clienttrace: src: /172.19.0.3:32824, dest:
/172.19.0.4:9866, bytes: 196, op: HDFS_WRITE, cliID: DFSClient_NONMAPREDUCE_1937218854_90,
offset: 0, srvID: ddffe429-6254-462b-912a-4dee1d91300f, blockid: BP-402907324-172.19.0.2-
1758653517014:blk_1073741825_1001, duration(ns): 21569220
2025-09-23 19:03:45,034 INFO datanode.DataNode: PacketResponder: BP-402907324-172.19.0.2-
1758653517014:blk_1073741825_1001, type=LAST_IN_PIPELINE terminating
```

Приложение 4. Лог выполнения datanode1

```
Configuring core
 - Setting fs.defaultFS=hdfs://namenode:9000
Configuring hdfs
 - Setting dfs.datanode.data.dir=file:///hadoop/dfs/data
/entrypoint.sh: line 28: HDFS_CONF_dfs.client.use.datanode.hostname: bad substitution
Configuring yarn
Configuring httpfs
Configuring kms
Configuring mapred
Configuring for multihomed network
2025-09-23 18:51:56,120 INFO datanode.DataNode: STARTUP_MSG:
/************************************************************
STARTUP_MSG: Starting DataNode
STARTUP_MSG:   host = datanode1/172.19.0.3
STARTUP_MSG:   args = []
STARTUP_MSG:   version = 3.2.1
STARTUP_MSG:   classpath = /etc/hadoop:/opt/hadoop-3.2.1/share/hadoop/common/lib/re2j-1.1.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-servlet-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/jersey-core-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/hadoop-
auth-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/asm-5.0.4.jar:/opt/hadoop-3.2.1/share/
hadoop/common/lib/kerby-asn1-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/j2objc-
annotations-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-mapper-asl-1.9.13.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/jsch-0.1.54.jar:/opt/hadoop-3.2.1/share/hadoop/common/
lib/jetty-http-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/htrace-core4-4.1.0-
incubating.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-server-1.0.1.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/curator-recipes-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jul-to-
slf4j-1.7.25.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-io-2.5.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/kerb-admin-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-
text-1.4.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/accessors-smart-1.2.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/
log4j-1.2.17.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-xc-1.9.13.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/kerby-pkix-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/
lib/commons-codec-1.11.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/javax.servlet-
api-3.1.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/nimbus-jose-jwt-4.41.1.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/commons-compress-1.18.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/jackson-core-
asl-1.9.13.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/kerb-crypto-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/kerb-simplekdc-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jsr305-3.0.0.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/commons-configuration2-2.1.1.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/failureaccess-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/
avro-1.7.7.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-core-1.0.1.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/jettison-1.1.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/paranamer-2.3.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/protobuf-java-2.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/jetty-util-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerby-
config-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/checker-qual-2.5.2.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/jetty-security-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/httpcore-4.4.10.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/
error_prone_annotations-2.2.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/token-
provider-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-webapp-9.3.24.v20180605.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/kerb-identity-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-
servlet-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/curator-
client-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-logging-1.1.3.jar:/opt/
```

hadoop-3.2.1/share/hadoop/common/lib/commons-beanutils-1.9.3.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/
netty-3.10.5.Final.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/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/slf4j-api-1.7.25.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/hadoop-
annotations-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jaxb-api-2.2.11.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/stax2-api-3.1.4.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/httpclient-4.5.6.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/kerb-util-1.0.1.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/commons-lang3-3.7.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/kerby-util-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-
io-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-databind-2.9.8.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/listenablefuture-9999.0-empty-to-avoid-conflict-with-
guava.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jsp-api-2.1.jar:/opt/hadoop-3.2.1/share/
hadoop/common/lib/kerb-common-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-
xml-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/slf4j-log4j12-1.7.25.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/jaxb-impl-2.2.3-1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-
client-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/json-smart-2.3.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/jersey-json-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/metrics-
core-3.2.4.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-cli-1.2.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/guava-27.0-jre.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-
net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-server-9.3.24.v20180605.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/share/hadoop/common/
lib/curator-framework-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/gson-2.2.4.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/kerby-xdr-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/
hadoop-common-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/common/hadoop-nfs-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/common/hadoop-kms-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/
hadoop-common-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs:/opt/hadoop-3.2.1/share/hadoop/hdfs/
lib/re2j-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-servlet-1.19.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-core-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/
hadoop-auth-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/asm-5.0.4.jar:/opt/hadoop-3.2.1/
share/hadoop/hdfs/lib/kerby-asn1-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/j2objc-
annotations-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-mapper-asl-1.9.13.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/jsch-0.1.54.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-
http-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/htrace-core4-4.1.0-
incubating.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-server-1.0.1.jar:/opt/hadoop-3.2.1/
share/hadoop/hdfs/lib/commons-collections-3.2.2.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/
okio-1.6.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/curator-recipes-2.13.0.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/commons-io-2.5.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/
kerb-admin-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-text-1.4.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/
lib/accessors-smart-1.2.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/log4j-1.2.17.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-xc-1.9.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/
lib/kerby-pkix-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-codec-1.11.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/javax.servlet-api-3.1.0.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/nimbus-jose-jwt-4.41.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-
compress-1.18.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-math3-3.1.1.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-core-asl-1.9.13.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/audience-annotations-0.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-
crypto-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-simplekdc-1.0.1.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/netty-all-4.0.52.Final.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/jsr305-3.0.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-configuration2-
2.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/failureaccess-1.0.jar:/opt/hadoop-3.2.1/share/
hadoop/hdfs/lib/avro-1.7.7.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-core-1.0.1.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/jettison-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/
animal-sniffer-annotations-1.17.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/paranamer-2.3.jar:/
opt/hadoop-3.2.1/share/hadoop/hdfs/lib/protobuf-java-2.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/

```
hdfs/lib/jetty-util-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-
config-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/okhttp-2.7.5.jar:/opt/hadoop-3.2.1/
share/hadoop/hdfs/lib/checker-qual-2.5.2.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-util-
ajax-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-
security-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/httpcore-4.4.10.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/error_prone_annotations-2.2.0.jar:/opt/hadoop-3.2.1/share/
hadoop/hdfs/lib/token-provider-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-
webapp-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-jaxrs-1.9.13.jar:/
opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-identity-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/jetty-servlet-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/curator-
client-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-logging-1.1.3.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/commons-beanutils-1.9.3.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/jackson-annotations-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/
netty-3.10.5.Final.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-core-2.9.8.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/leveldbjni-all-1.8.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/hadoop-
annotations-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jaxb-api-2.2.11.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/json-simple-1.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/
lib/stax2-api-3.1.4.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/snappy-java-1.0.5.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/httpclient-4.5.6.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/
kerb-util-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jsr311-api-1.1.1.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/commons-daemon-1.0.13.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/commons-lang3-3.7.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/woodstox-core-5.0.3.jar:/
opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-util-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/
lib/jetty-io-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-
databind-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/listenablefuture-9999.0-empty-to-
avoid-conflict-with-guava.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-common-1.0.1.jar:/
opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-xml-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/
hadoop/hdfs/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jaxb-impl-2.2.3-
1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-client-1.0.1.jar:/opt/hadoop-3.2.1/share/
hadoop/hdfs/lib/json-smart-2.3.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-
json-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-cli-1.2.jar:/opt/hadoop-3.2.1/
share/hadoop/hdfs/lib/guava-27.0-jre.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-
net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-server-9.3.24.v20180605.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/
curator-framework-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/gson-2.2.4.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-xdr-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/
hadoop-hdfs-native-client-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-
rbf-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-3.2.1-tests.jar:/opt/hadoop-3.2.1/
share/hadoop/hdfs/hadoop-hdfs-client-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-
client-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-rbf-3.2.1-tests.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-nfs-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/
hadoop-hdfs-httpfs-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-native-client-3.2.1.jar:/opt/hadoop-3.2.1/share/
hadoop/mapreduce/lib/hamcrest-core-1.3.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/lib/
junit-4.11.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-
nativetask-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-hs-
plugins-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-
app-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-
shuffle-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-
jobclient-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-
common-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-hs-3.2.1.jar:/
opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-uploader-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-jobclient-3.2.1-tests.jar:/opt/
hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-core-3.2.1.jar:/opt/hadoop-3.2.1/
share/hadoop/mapreduce/hadoop-mapreduce-examples-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn:/
opt/hadoop-3.2.1/share/hadoop/yarn/lib/geronimo-jcache_1.0_spec-1.0-alpha-1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/bcpkix-jdk15on-1.60.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
lib/javax.inject-1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/jackson-module-jaxb-
```

```
annotations-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/jackson-jaxrs-json-
provider-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/snakeyaml-1.16.jar:/opt/hadoop-3.2.1/
share/hadoop/yarn/lib/java-util-1.9.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/
objenesis-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/guice-4.0.jar:/opt/hadoop-3.2.1/share/
hadoop/yarn/lib/jersey-guice-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/guice-
servlet-4.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/mssql-jdbc-6.2.1.jre7.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/json-io-2.5.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/
fst-2.50.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/swagger-annotations-1.5.4.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/jackson-jaxrs-base-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/
yarn/lib/ehcache-3.3.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/bcprov-jdk15on-1.60.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/metrics-core-3.2.4.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
lib/aopalliance-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/HikariCP-java7-2.4.12.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/jersey-client-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
hadoop-yarn-server-tests-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-applications-
unmanaged-am-launcher-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-
router-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-common-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-timeline-pluginstorage-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-client-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
hadoop-yarn-services-api-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-web-
proxy-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-api-3.2.1.jar:/opt/hadoop-3.2.1/
share/hadoop/yarn/hadoop-yarn-server-applicationhistoryservice-3.2.1.jar:/opt/hadoop-3.2.1/
share/hadoop/yarn/hadoop-yarn-applications-distributedshell-3.2.1.jar:/opt/hadoop-3.2.1/share/
hadoop/yarn/hadoop-yarn-submarine-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-
services-core-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-registry-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-nodemanager-3.2.1.jar:/opt/hadoop-3.2.1/share/
hadoop/yarn/hadoop-yarn-server-resourcemanager-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
hadoop-yarn-server-common-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-
sharedcachemanager-3.2.1.jar
STARTUP_MSG:   build = https://gitbox.apache.org/repos/asf/hadoop.git -r
b3cbbb467e22ea829b3808f4b7b01d07e0bf3842; compiled by 'rohithsharmaks' on 2019-09-10T15:56Z
STARTUP_MSG:   java = 1.8.0_232
************************************************************/
2025-09-23 18:51:56,132 INFO datanode.DataNode: registered UNIX signal handlers for [TERM, HUP,
INT]
2025-09-23 18:51:56,631 INFO checker.ThrottledAsyncChecker: Scheduling a check for
[DISK]file:/hadoop/dfs/data
2025-09-23 18:51:56,758 INFO impl.MetricsConfig: Loaded properties from hadoop-
metrics2.properties
2025-09-23 18:51:56,829 INFO impl.MetricsSystemImpl: Scheduled Metric snapshot period at 10
second(s).
2025-09-23 18:51:56,829 INFO impl.MetricsSystemImpl: DataNode metrics system started
2025-09-23 18:51:57,024 INFO common.Util: dfs.datanode.fileio.profiling.sampling.percentage set
to 0. Disabling file IO profiling
2025-09-23 18:51:57,028 INFO datanode.BlockScanner: Initialized block scanner with
targetBytesPerSec 1048576
2025-09-23 18:51:57,035 INFO datanode.DataNode: Configured hostname is datanode1
2025-09-23 18:51:57,036 INFO common.Util: dfs.datanode.fileio.profiling.sampling.percentage set
to 0. Disabling file IO profiling
2025-09-23 18:51:57,041 INFO datanode.DataNode: Starting DataNode with maxLockedMemory = 0
2025-09-23 18:51:57,071 INFO datanode.DataNode: Opened streaming server at /0.0.0.0:9866
2025-09-23 18:51:57,075 INFO datanode.DataNode: Balancing bandwidth is 10485760 bytes/s
2025-09-23 18:51:57,075 INFO datanode.DataNode: Number threads for balancing is 50
2025-09-23 18:51:57,128 INFO util.log: Logging initialized @1589ms
2025-09-23 18:51:57,246 INFO server.AuthenticationFilter: Unable to initialize
FileSignerSecretProvider, falling back to use random secrets.
2025-09-23 18:51:57,250 INFO http.HttpRequestLog: Http request log for http.requests.datanode is
not defined
2025-09-23 18:51:57,273 INFO http.HttpServer2: Added global filter 'safety'
(class=org.apache.hadoop.http.HttpServer2$QuotingInputFilter)
```

2025-09-23 18:51:57,275 INFO http.HttpServer2: Added filter static_user_filter
(class=org.apache.hadoop.http.lib.StaticUserWebFilter$StaticUserFilter) to context datanode
2025-09-23 18:51:57,275 INFO http.HttpServer2: Added filter static_user_filter
(class=org.apache.hadoop.http.lib.StaticUserWebFilter$StaticUserFilter) to context logs
2025-09-23 18:51:57,275 INFO http.HttpServer2: Added filter static_user_filter
(class=org.apache.hadoop.http.lib.StaticUserWebFilter$StaticUserFilter) to context static
2025-09-23 18:51:57,302 INFO http.HttpServer2: Jetty bound to port 35481
2025-09-23 18:51:57,304 INFO server.Server: jetty-9.3.24.v20180605, build timestamp: 2018-06-
05T17:11:56Z, git hash: 84205aa28f11a4f31f2a3b86d1bba2cc8ab69827
2025-09-23 18:51:57,339 INFO handler.ContextHandler: Started
o.e.j.s.ServletContextHandler@6bb4dd34{/logs,file:///opt/hadoop-3.2.1/logs/,AVAILABLE}
2025-09-23 18:51:57,340 INFO handler.ContextHandler: Started
o.e.j.s.ServletContextHandler@45efd90f{/static,file:///opt/hadoop-3.2.1/share/hadoop/hdfs/
webapps/static/,AVAILABLE}
2025-09-23 18:51:57,421 INFO handler.ContextHandler: Started
o.e.j.w.WebAppContext@58594a11{/,file:///opt/hadoop-3.2.1/share/hadoop/hdfs/webapps/
datanode/,AVAILABLE}{/datanode}
2025-09-23 18:51:57,428 INFO server.AbstractConnector: Started ServerConnector@12a94400{HTTP/1.1,
[http/1.1]}{localhost:35481}
2025-09-23 18:51:57,428 INFO server.Server: Started @1889ms
2025-09-23 18:51:57,729 INFO web.DatanodeHttpServer: Listening HTTP traffic on /0.0.0.0:9864
2025-09-23 18:51:57,740 INFO util.JvmPauseMonitor: Starting JVM pause monitor
2025-09-23 18:51:57,745 INFO datanode.DataNode: dnUserName = root
2025-09-23 18:51:57,746 INFO datanode.DataNode: supergroup = supergroup
2025-09-23 18:51:57,821 INFO ipc.CallQueueManager: Using callQueue: class
java.util.concurrent.LinkedBlockingQueue, queueCapacity: 1000, scheduler: class
org.apache.hadoop.ipc.DefaultRpcScheduler, ipcBackoff: false.
2025-09-23 18:51:57,844 INFO ipc.Server: Starting Socket Reader #1 for port 9867
2025-09-23 18:51:58,158 INFO datanode.DataNode: Opened IPC server at /0.0.0.0:9867
2025-09-23 18:51:58,184 INFO datanode.DataNode: Refresh request received for nameservices: null
2025-09-23 18:51:58,197 INFO datanode.DataNode: Starting BPOfferServices for nameservices:
<default>
2025-09-23 18:51:58,210 INFO datanode.DataNode: Block pool <registering> (Datanode Uuid
unassigned) service to namenode/172.19.0.2:9000 starting to offer service
2025-09-23 18:51:58,217 INFO ipc.Server: IPC Server Responder: starting
2025-09-23 18:51:58,217 INFO ipc.Server: IPC Server listener on 9867: starting
2025-09-23 18:51:59,312 INFO ipc.Client: Retrying connect to server: namenode/172.19.0.2:9000.
Already tried 0 time(s); retry policy is RetryUpToMaximumCountWithFixedSleep(maxRetries=10,
sleepTime=1000 MILLISECONDS)
2025-09-23 18:52:00,312 INFO ipc.Client: Retrying connect to server: namenode/172.19.0.2:9000.
Already tried 1 time(s); retry policy is RetryUpToMaximumCountWithFixedSleep(maxRetries=10,
sleepTime=1000 MILLISECONDS)
2025-09-23 18:52:00,500 INFO datanode.DataNode: Acknowledging ACTIVE Namenode during
handshakeBlock pool <registering> (Datanode Uuid unassigned) service to namenode/172.19.0.2:9000
2025-09-23 18:52:00,502 INFO common.Storage: Using 1 threads to upgrade data directories
(dfs.datanode.parallel.volumes.load.threads.num=1, dataDirs=1)
2025-09-23 18:52:00,509 INFO common.Storage: Lock on /hadoop/dfs/data/in_use.lock acquired by
nodename 89@datanode1
2025-09-23 18:52:00,510 INFO common.Storage: Storage directory with location
[DISK]file:/hadoop/dfs/data is not formatted for namespace 1853864144. Formatting...
2025-09-23 18:52:00,511 INFO common.Storage: Generated new storageID DS-eda7ede1-6f0a-4310-8b5f-
e36fc04b022d for directory /hadoop/dfs/data
2025-09-23 18:52:00,535 INFO common.Storage: Analyzing storage directories for bpid BP-402907324-
172.19.0.2-1758653517014
2025-09-23 18:52:00,535 INFO common.Storage: Locking is disabled for
/hadoop/dfs/data/current/BP-402907324-172.19.0.2-1758653517014
2025-09-23 18:52:00,536 INFO common.Storage: Block pool storage directory for location
[DISK]file:/hadoop/dfs/data and block pool id BP-402907324-172.19.0.2-1758653517014 is not
formatted. Formatting ...

23

```
2025-09-23 18:52:00,536 INFO common.Storage: Formatting block pool BP-402907324-172.19.0.2-
1758653517014 directory /hadoop/dfs/data/current/BP-402907324-172.19.0.2-1758653517014/current
2025-09-23 18:52:00,547 INFO datanode.DataNode: Setting up storage:
nsid=1853864144;bpid=BP-402907324-172.19.0.2-1758653517014;lv=-57;nsInfo=lv=-65;cid=CID-931c6537-
8fbe-4bcc-b3f4-0efd4406b052;nsid=1853864144;c=1758653517014;bpid=BP-402907324-172.19.0.2-
1758653517014;dnuuid=null
2025-09-23 18:52:00,552 INFO datanode.DataNode: Generated and persisted new Datanode UUID
f596791b-f5b2-4b98-8b4a-20e119c80f3f
2025-09-23 18:52:00,665 INFO impl.FsDatasetImpl: Added new volume: DS-eda7ede1-6f0a-4310-8b5f-
e36fc04b022d
2025-09-23 18:52:00,665 INFO impl.FsDatasetImpl: Added volume - [DISK]file:/hadoop/dfs/data,
StorageType: DISK
2025-09-23 18:52:00,669 INFO impl.FsDatasetImpl: Registered FSDatasetState MBean
2025-09-23 18:52:00,676 INFO checker.ThrottledAsyncChecker: Scheduling a check for
/hadoop/dfs/data
2025-09-23 18:52:00,684 INFO checker.DatasetVolumeChecker: Scheduled health check for volume
/hadoop/dfs/data
2025-09-23 18:52:00,685 INFO impl.FsDatasetImpl: Adding block pool BP-402907324-172.19.0.2-
1758653517014
2025-09-23 18:52:00,686 INFO impl.FsDatasetImpl: Scanning block pool BP-402907324-172.19.0.2-
1758653517014 on volume /hadoop/dfs/data...
2025-09-23 18:52:00,711 INFO impl.FsDatasetImpl: Time taken to scan block pool BP-402907324-
172.19.0.2-1758653517014 on /hadoop/dfs/data: 25ms
2025-09-23 18:52:00,711 INFO impl.FsDatasetImpl: Total time to scan all replicas for block pool
BP-402907324-172.19.0.2-1758653517014: 25ms
2025-09-23 18:52:00,712 INFO impl.FsDatasetImpl: Adding replicas to map for block pool
BP-402907324-172.19.0.2-1758653517014 on volume /hadoop/dfs/data...
2025-09-23 18:52:00,712 INFO impl.BlockPoolSlice: Replica Cache file:
/hadoop/dfs/data/current/BP-402907324-172.19.0.2-1758653517014/current/replicas doesn't exist
2025-09-23 18:52:00,713 INFO impl.FsDatasetImpl: Time to add replicas to map for block pool
BP-402907324-172.19.0.2-1758653517014 on volume /hadoop/dfs/data: 2ms
2025-09-23 18:52:00,713 INFO impl.FsDatasetImpl: Total time to add all replicas to map for block
pool BP-402907324-172.19.0.2-1758653517014: 2ms
2025-09-23 18:52:00,715 INFO datanode.VolumeScanner: Now scanning bpid BP-402907324-172.19.0.2-
1758653517014 on volume /hadoop/dfs/data
2025-09-23 18:52:00,717 INFO datanode.VolumeScanner: VolumeScanner(/hadoop/dfs/data, DS-eda7ede1-
6f0a-4310-8b5f-e36fc04b022d): finished scanning block pool BP-402907324-172.19.0.2-1758653517014
2025-09-23 18:52:00,735 INFO datanode.VolumeScanner: VolumeScanner(/hadoop/dfs/data, DS-eda7ede1-
6f0a-4310-8b5f-e36fc04b022d): no suitable block pools found to scan.  Waiting 1814399980 ms.
2025-09-23 18:52:00,735 INFO datanode.DirectoryScanner: Periodic Directory Tree Verification scan
starting at 9/23/25 10:51 PM with interval of 21600000ms
2025-09-23 18:52:00,740 INFO datanode.DataNode: Block pool BP-402907324-172.19.0.2-1758653517014
(Datanode Uuid f596791b-f5b2-4b98-8b4a-20e119c80f3f) service to namenode/172.19.0.2:9000
beginning handshake with NN
2025-09-23 18:52:00,786 INFO datanode.DataNode: Block pool Block pool BP-402907324-172.19.0.2-
1758653517014 (Datanode Uuid f596791b-f5b2-4b98-8b4a-20e119c80f3f) service to
namenode/172.19.0.2:9000 successfully registered with NN
2025-09-23 18:52:00,786 INFO datanode.DataNode: For namenode namenode/172.19.0.2:9000 using
BLOCKREPORT_INTERVAL of 21600000msec CACHEREPORT_INTERVAL of 10000msec Initial delay: 0msec;
heartBeatInterval=3000
2025-09-23 18:52:00,925 INFO datanode.DataNode: Successfully sent block report
0x5b3fefa7a59bf8cb,  containing 1 storage report(s), of which we sent 1. The reports had 0 total
blocks and used 1 RPC(s). This took 3 msec to generate and 53 msecs for RPC and NN processing.
Got back one command: FinalizeCommand/5.
2025-09-23 18:52:00,925 INFO datanode.DataNode: Got finalize command for block pool BP-402907324-
172.19.0.2-1758653517014
2025-09-23 19:03:44,750 INFO datanode.webhdfs: 172.19.0.1 PUT /webhdfs/v1/test/simple_data.json?
op=CREATE&user.name=root&namenoderpcaddress=namenode:9000&createflag=&createparent=true&overwrite
=true&user.name=root 201
```

2025-09-23 19:03:44,827 INFO sasl.SaslDataTransferClient: SASL encryption trust check: localHostTrusted = false, remoteHostTrusted = false
2025-09-23 19:03:44,892 INFO datanode.DataNode: Receiving BP-402907324-172.19.0.2-1758653517014:blk_1073741825_1001 src: /172.19.0.3:49384 dest: /172.19.0.3:9866
2025-09-23 19:03:44,909 INFO sasl.SaslDataTransferClient: SASL encryption trust check: localHostTrusted = false, remoteHostTrusted = false
2025-09-23 19:03:45,037 INFO DataNode.clienttrace: src: /172.19.0.3:49384, dest: /172.19.0.3:9866, bytes: 196, op: HDFS_WRITE, cliID: DFSClient_NONMAPREDUCE_1937218854_90, offset: 0, srvID: f596791b-f5b2-4b98-8b4a-20e119c80f3f, blockid: BP-402907324-172.19.0.2-1758653517014:blk_1073741825_1001, duration(ns): 19480100
2025-09-23 19:03:45,038 INFO datanode.DataNode: PacketResponder: BP-402907324-172.19.0.2-1758653517014:blk_1073741825_1001, type=HAS_DOWNSTREAM_IN_PIPELINE, downstreams=1: [172.19.0.4:9866] terminating
2025-09-23 19:03:45,524 INFO sasl.SaslDataTransferClient: SASL encryption trust check: localHostTrusted = false, remoteHostTrusted = false
2025-09-23 19:03:45,551 INFO datanode.webhdfs: 172.19.0.1 GET /webhdfs/v1/test/simple_data.json?op=OPEN&user.name=root&namenoderpcaddress=namenode:9000&offset=0 200

Приложение 5. Лог выполнения namenode

```
Configuring core
 - Setting fs.defaultFS=hdfs://namenode:9000
Configuring hdfs
 - Setting dfs.namenode.name.dir=file:///hadoop/dfs/name
Configuring yarn
Configuring httpfs
Configuring kms
Configuring mapred
Configuring for multihomed network
2025-09-23 19:50:29,306 INFO namenode.NameNode: STARTUP_MSG:
/************************************************************
STARTUP_MSG: Starting NameNode
STARTUP_MSG:   host = namenode/172.19.0.2
STARTUP_MSG:   args = []
STARTUP_MSG:   version = 3.2.1
STARTUP_MSG:   classpath = /etc/hadoop:/opt/hadoop-3.2.1/share/hadoop/common/lib/re2j-1.1.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-servlet-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/jersey-core-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/hadoop-
auth-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/asm-5.0.4.jar:/opt/hadoop-3.2.1/share/
hadoop/common/lib/kerby-asn1-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/j2objc-
annotations-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-mapper-asl-1.9.13.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/jsch-0.1.54.jar:/opt/hadoop-3.2.1/share/hadoop/common/
lib/jetty-http-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/htrace-core4-4.1.0-
incubating.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-server-1.0.1.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/curator-recipes-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jul-to-
slf4j-1.7.25.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-io-2.5.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/kerb-admin-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-
text-1.4.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/accessors-smart-1.2.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/
log4j-1.2.17.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-xc-1.9.13.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/kerby-pkix-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/
lib/commons-codec-1.11.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/javax.servlet-
api-3.1.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/nimbus-jose-jwt-4.41.1.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/commons-compress-1.18.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/jackson-core-
asl-1.9.13.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/kerb-crypto-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/kerb-simplekdc-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jsr305-3.0.0.jar:/
opt/hadoop-3.2.1/share/hadoop/common/lib/commons-configuration2-2.1.1.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/failureaccess-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/
avro-1.7.7.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-core-1.0.1.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/jettison-1.1.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/paranamer-2.3.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/protobuf-java-2.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/
common/lib/jetty-util-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerby-
config-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/checker-qual-2.5.2.jar:/opt/
hadoop-3.2.1/share/hadoop/common/lib/jetty-security-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/
share/hadoop/common/lib/httpcore-4.4.10.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/
error_prone_annotations-2.2.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/token-
provider-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-webapp-9.3.24.v20180605.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/kerb-identity-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-
```

servlet-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/curator-client-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-logging-1.1.3.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-beanutils-1.9.3.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/netty-3.10.5.Final.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/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/slf4j-api-1.7.25.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/hadoop-annotations-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jaxb-api-2.2.11.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/stax2-api-3.1.4.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/httpclient-4.5.6.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-util-1.0.1.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/commons-lang3-3.7.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/kerby-util-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-io-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jackson-databind-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jsp-api-2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-common-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-xml-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/slf4j-log4j12-1.7.25.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jaxb-impl-2.2.3-1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerb-client-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/json-smart-2.3.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jersey-json-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/metrics-core-3.2.4.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-cli-1.2.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/guava-27.0-jre.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/commons-net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/jetty-server-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/curator-framework-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/gson-2.2.4.jar:/opt/hadoop-3.2.1/share/hadoop/common/lib/kerby-xdr-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/hadoop-common-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/common/hadoop-nfs-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/hadoop-kms-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/common/hadoop-common-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/re2j-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-servlet-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-core-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/hadoop-auth-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/asm-5.0.4.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-asn1-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/j2objc-annotations-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-mapper-asl-1.9.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jsch-0.1.54.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-http-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/htrace-core4-4.1.0-incubating.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-server-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-collections-3.2.2.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/okio-1.6.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/curator-recipes-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-io-2.5.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-admin-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-text-1.4.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-server-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/accessors-smart-1.2.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/log4j-1.2.17.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-xc-1.9.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-pkix-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-codec-1.11.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/javax.servlet-api-3.1.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/nimbus-jose-jwt-4.41.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-compress-1.18.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-math3-3.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-core-asl-1.9.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/audience-annotations-0.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-crypto-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-simplekdc-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/netty-all-4.0.52.Final.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jsr305-3.0.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-configuration2-2.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/failureaccess-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/avro-1.7.7.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-core-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jettison-1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/

```
animal-sniffer-annotations-1.17.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/paranamer-2.3.jar:/
opt/hadoop-3.2.1/share/hadoop/hdfs/lib/protobuf-java-2.5.0.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/jetty-util-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-
config-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/okhttp-2.7.5.jar:/opt/hadoop-3.2.1/
share/hadoop/hdfs/lib/checker-qual-2.5.2.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-util-
ajax-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-
security-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/httpcore-4.4.10.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/error_prone_annotations-2.2.0.jar:/opt/hadoop-3.2.1/share/
hadoop/hdfs/lib/token-provider-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-
webapp-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-jaxrs-1.9.13.jar:/
opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-identity-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/jetty-servlet-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/curator-
client-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-logging-1.1.3.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/commons-beanutils-1.9.3.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/jackson-annotations-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/
netty-3.10.5.Final.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-core-2.9.8.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/jcip-annotations-1.0-1.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/leveldbjni-all-1.8.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/hadoop-
annotations-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jaxb-api-2.2.11.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/json-simple-1.1.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/
lib/stax2-api-3.1.4.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/snappy-java-1.0.5.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/httpclient-4.5.6.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/
kerb-util-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jsr311-api-1.1.1.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/commons-daemon-1.0.13.jar:/opt/hadoop-3.2.1/share/hadoop/
hdfs/lib/commons-lang3-3.7.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/woodstox-core-5.0.3.jar:/
opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-util-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/
lib/jetty-io-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jackson-
databind-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/listenablefuture-9999.0-empty-to-
avoid-conflict-with-guava.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-common-1.0.1.jar:/
opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-xml-9.3.24.v20180605.jar:/opt/hadoop-3.2.1/share/
hadoop/hdfs/lib/zookeeper-3.4.13.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jaxb-impl-2.2.3-
1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/kerb-client-1.0.1.jar:/opt/hadoop-3.2.1/share/
hadoop/hdfs/lib/json-smart-2.3.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jersey-
json-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-cli-1.2.jar:/opt/hadoop-3.2.1/
share/hadoop/hdfs/lib/guava-27.0-jre.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/commons-
net-3.6.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/jetty-server-9.3.24.v20180605.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/dnsjava-2.1.7.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/
curator-framework-2.13.0.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/lib/gson-2.2.4.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/lib/kerby-xdr-1.0.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/
hadoop-hdfs-native-client-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-
rbf-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-3.2.1-tests.jar:/opt/hadoop-3.2.1/
share/hadoop/hdfs/hadoop-hdfs-client-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-
client-3.2.1-tests.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-rbf-3.2.1-tests.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-nfs-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/
hadoop-hdfs-httpfs-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/hdfs/hadoop-hdfs-native-client-3.2.1.jar:/opt/hadoop-3.2.1/share/
hadoop/mapreduce/lib/hamcrest-core-1.3.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/lib/
junit-4.11.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-
nativetask-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-hs-
plugins-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-
app-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-
shuffle-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-
jobclient-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-
common-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-hs-3.2.1.jar:/
opt/hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-uploader-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-jobclient-3.2.1-tests.jar:/opt/
hadoop-3.2.1/share/hadoop/mapreduce/hadoop-mapreduce-client-core-3.2.1.jar:/opt/hadoop-3.2.1/
share/hadoop/mapreduce/hadoop-mapreduce-examples-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn:/
opt/hadoop-3.2.1/share/hadoop/yarn/lib/geronimo-jcache_1.0_spec-1.0-alpha-1.jar:/opt/
```

```
hadoop-3.2.1/share/hadoop/yarn/lib/bcpkix-jdk15on-1.60.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
lib/javax.inject-1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/jackson-module-jaxb-
annotations-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/jackson-jaxrs-json-
provider-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/snakeyaml-1.16.jar:/opt/hadoop-3.2.1/
share/hadoop/yarn/lib/java-util-1.9.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/
objenesis-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/guice-4.0.jar:/opt/hadoop-3.2.1/share/
hadoop/yarn/lib/jersey-guice-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/guice-
servlet-4.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/mssql-jdbc-6.2.1.jre7.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/json-io-2.5.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/
fst-2.50.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/swagger-annotations-1.5.4.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/jackson-jaxrs-base-2.9.8.jar:/opt/hadoop-3.2.1/share/hadoop/
yarn/lib/ehcache-3.3.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/bcprov-jdk15on-1.60.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/metrics-core-3.2.4.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
lib/aopalliance-1.0.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/lib/HikariCP-java7-2.4.12.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/lib/jersey-client-1.19.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
hadoop-yarn-server-tests-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-applications-
unmanaged-am-launcher-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-
router-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-common-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-timeline-pluginstorage-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-client-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
hadoop-yarn-services-api-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-web-
proxy-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-api-3.2.1.jar:/opt/hadoop-3.2.1/
share/hadoop/yarn/hadoop-yarn-server-applicationhistoryservice-3.2.1.jar:/opt/hadoop-3.2.1/
share/hadoop/yarn/hadoop-yarn-applications-distributedshell-3.2.1.jar:/opt/hadoop-3.2.1/share/
hadoop/yarn/hadoop-yarn-submarine-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-
services-core-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-registry-3.2.1.jar:/opt/
hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-nodemanager-3.2.1.jar:/opt/hadoop-3.2.1/share/
hadoop/yarn/hadoop-yarn-server-resourcemanager-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/
hadoop-yarn-server-common-3.2.1.jar:/opt/hadoop-3.2.1/share/hadoop/yarn/hadoop-yarn-server-
sharedcachemanager-3.2.1.jar
STARTUP_MSG:   build = https://gitbox.apache.org/repos/asf/hadoop.git -r
b3cbbb467e22ea829b3808f4b7b01d07e0bf3842; compiled by 'rohithsharmaks' on 2019-09-10T15:56Z
STARTUP_MSG:   java = 1.8.0_232
************************************************************/
2025-09-23 19:50:29,319 INFO namenode.NameNode: registered UNIX signal handlers for [TERM, HUP,
INT]
2025-09-23 19:50:29,434 INFO namenode.NameNode: createNameNode []
2025-09-23 19:50:29,683 INFO impl.MetricsConfig: Loaded properties from hadoop-
metrics2.properties
2025-09-23 19:50:29,852 INFO impl.MetricsSystemImpl: Scheduled Metric snapshot period at 10
second(s).
2025-09-23 19:50:29,852 INFO impl.MetricsSystemImpl: NameNode metrics system started
2025-09-23 19:50:29,910 INFO namenode.NameNodeUtils: fs.defaultFS is hdfs://namenode:9000
2025-09-23 19:50:29,911 INFO namenode.NameNode: Clients should use namenode:9000 to access this
namenode/service.
2025-09-23 19:50:30,094 INFO util.JvmPauseMonitor: Starting JVM pause monitor
2025-09-23 19:50:30,148 INFO hdfs.DFSUtil: Starting Web-server for hdfs at: http://0.0.0.0:9870
2025-09-23 19:50:30,174 INFO util.log: Logging initialized @1605ms
2025-09-23 19:50:30,322 INFO server.AuthenticationFilter: Unable to initialize
FileSignerSecretProvider, falling back to use random secrets.
2025-09-23 19:50:30,337 INFO http.HttpRequestLog: Http request log for http.requests.namenode is
not defined
2025-09-23 19:50:30,348 INFO http.HttpServer2: Added global filter 'safety'
(class=org.apache.hadoop.http.HttpServer2$QuotingInputFilter)
2025-09-23 19:50:30,351 INFO http.HttpServer2: Added filter static_user_filter
(class=org.apache.hadoop.http.lib.StaticUserWebFilter$StaticUserFilter) to context hdfs
2025-09-23 19:50:30,351 INFO http.HttpServer2: Added filter static_user_filter
(class=org.apache.hadoop.http.lib.StaticUserWebFilter$StaticUserFilter) to context logs
2025-09-23 19:50:30,351 INFO http.HttpServer2: Added filter static_user_filter
```

(class=org.apache.hadoop.http.lib.StaticUserWebFilter$StaticUserFilter) to context static
2025-09-23 19:50:30,381 INFO http.HttpServer2: Added filter
'org.apache.hadoop.hdfs.web.AuthFilter' (class=org.apache.hadoop.hdfs.web.AuthFilter)
2025-09-23 19:50:30,382 INFO http.HttpServer2: addJerseyResourcePackage:
packageName=org.apache.hadoop.hdfs.server.namenode.web.resources;org.apache.hadoop.hdfs.web.resou
rces, pathSpec=/webhdfs/v1/*
2025-09-23 19:50:30,397 INFO http.HttpServer2: Jetty bound to port 9870
2025-09-23 19:50:30,399 INFO server.Server: jetty-9.3.24.v20180605, build timestamp: 2018-06-
05T17:11:56Z, git hash: 84205aa28f11a4f31f2a3b86d1bba2cc8ab69827
2025-09-23 19:50:30,439 INFO handler.ContextHandler: Started
o.e.j.s.ServletContextHandler@7d0b7e3c{/logs,file:///opt/hadoop-3.2.1/logs/,AVAILABLE}
2025-09-23 19:50:30,440 INFO handler.ContextHandler: Started
o.e.j.s.ServletContextHandler@4b741d6d{/static,file:///opt/hadoop-3.2.1/share/hadoop/hdfs/
webapps/static/,AVAILABLE}
2025-09-23 19:50:30,545 INFO handler.ContextHandler: Started
o.e.j.w.WebAppContext@7486b455{/,file:///opt/hadoop-3.2.1/share/hadoop/hdfs/webapps/
hdfs/,AVAILABLE}{/hdfs}
2025-09-23 19:50:30,554 INFO server.AbstractConnector: Started ServerConnector@700fb871{HTTP/1.1,
[http/1.1]}{0.0.0.0:9870}
2025-09-23 19:50:30,554 INFO server.Server: Started @1986ms
2025-09-23 19:50:30,810 WARN namenode.FSNamesystem: Only one image storage directory
(dfs.namenode.name.dir) configured. Beware of data loss due to lack of redundant storage
directories!
2025-09-23 19:50:30,811 WARN namenode.FSNamesystem: Only one namespace edits storage directory
(dfs.namenode.edits.dir) configured. Beware of data loss due to lack of redundant storage
directories!
2025-09-23 19:50:30,927 INFO namenode.FSEditLog: Edit logging is async:true
2025-09-23 19:50:30,998 INFO namenode.FSNamesystem: KeyProvider: null
2025-09-23 19:50:31,001 INFO namenode.FSNamesystem: fsLock is fair: true
2025-09-23 19:50:31,001 INFO namenode.FSNamesystem: Detailed lock hold time metrics enabled:
false
2025-09-23 19:50:31,009 INFO namenode.FSNamesystem: fsOwner   = root (auth:SIMPLE)
2025-09-23 19:50:31,009 INFO namenode.FSNamesystem: supergroup   = supergroup
2025-09-23 19:50:31,009 INFO namenode.FSNamesystem: isPermissionEnabled = true
2025-09-23 19:50:31,009 INFO namenode.FSNamesystem: HA Enabled: false
2025-09-23 19:50:31,070 INFO common.Util: dfs.datanode.fileio.profiling.sampling.percentage set
to 0. Disabling file IO profiling
2025-09-23 19:50:31,085 INFO blockmanagement.DatanodeManager: dfs.block.invalidate.limit:
configured=1000, counted=60, effected=1000
2025-09-23 19:50:31,085 INFO blockmanagement.DatanodeManager:
dfs.namenode.datanode.registration.ip-hostname-check=true
2025-09-23 19:50:31,092 INFO blockmanagement.BlockManager:
dfs.namenode.startup.delay.block.deletion.sec is set to 000:00:00:00.000
2025-09-23 19:50:31,092 INFO blockmanagement.BlockManager: The block deletion will start around
2025 Sep 23 19:50:31
2025-09-23 19:50:31,095 INFO util.GSet: Computing capacity for map BlocksMap
2025-09-23 19:50:31,095 INFO util.GSet: VM type   = 64-bit
2025-09-23 19:50:31,097 INFO util.GSet: 2.0% max memory 3.3 GB = 68.4 MB
2025-09-23 19:50:31,097 INFO util.GSet: capacity   = 2^23 = 8388608 entries
2025-09-23 19:50:31,112 INFO blockmanagement.BlockManager: Storage policy satisfier is disabled
2025-09-23 19:50:31,112 INFO blockmanagement.BlockManager: dfs.block.access.token.enable = false
2025-09-23 19:50:31,122 INFO Configuration.deprecation: No unit for
dfs.namenode.safemode.extension(30000) assuming MILLISECONDS
2025-09-23 19:50:31,122 INFO blockmanagement.BlockManagerSafeMode:
dfs.namenode.safemode.threshold-pct = 0.9990000128746033
2025-09-23 19:50:31,122 INFO blockmanagement.BlockManagerSafeMode:
dfs.namenode.safemode.min.datanodes = 0
2025-09-23 19:50:31,122 INFO blockmanagement.BlockManagerSafeMode:
dfs.namenode.safemode.extension = 30000

```
2025-09-23 19:50:31,123 INFO blockmanagement.BlockManager: defaultReplication        = 3
2025-09-23 19:50:31,123 INFO blockmanagement.BlockManager: maxReplication           = 512
2025-09-23 19:50:31,123 INFO blockmanagement.BlockManager: minReplication           = 1
2025-09-23 19:50:31,123 INFO blockmanagement.BlockManager: maxReplicationStreams    = 2
2025-09-23 19:50:31,123 INFO blockmanagement.BlockManager: redundancyRecheckInterval = 3000ms
2025-09-23 19:50:31,123 INFO blockmanagement.BlockManager: encryptDataTransfer      = false
2025-09-23 19:50:31,123 INFO blockmanagement.BlockManager: maxNumBlocksToLog        = 1000
2025-09-23 19:50:31,158 INFO namenode.FSDirectory: GLOBAL serial map: bits=29
maxEntries=536870911
2025-09-23 19:50:31,158 INFO namenode.FSDirectory: USER serial map: bits=24 maxEntries=16777215
2025-09-23 19:50:31,158 INFO namenode.FSDirectory: GROUP serial map: bits=24 maxEntries=16777215
2025-09-23 19:50:31,158 INFO namenode.FSDirectory: XATTR serial map: bits=24 maxEntries=16777215
2025-09-23 19:50:31,177 INFO util.GSet: Computing capacity for map INodeMap
2025-09-23 19:50:31,177 INFO util.GSet: VM type       = 64-bit
2025-09-23 19:50:31,177 INFO util.GSet: 1.0% max memory 3.3 GB = 34.2 MB
2025-09-23 19:50:31,177 INFO util.GSet: capacity       = 2^22 = 4194304 entries
2025-09-23 19:50:31,241 INFO namenode.FSDirectory: ACLs enabled? false
2025-09-23 19:50:31,242 INFO namenode.FSDirectory: POSIX ACL inheritance enabled? true
2025-09-23 19:50:31,242 INFO namenode.FSDirectory: XAttrs enabled? true
2025-09-23 19:50:31,242 INFO namenode.NameNode: Caching file names occurring more than 10 times
2025-09-23 19:50:31,249 INFO snapshot.SnapshotManager: Loaded config captureOpenFiles: false,
skipCaptureAccessTimeOnlyChange: false, snapshotDiffAllowSnapRootDescendant: true,
maxSnapshotLimit: 65536
2025-09-23 19:50:31,251 INFO snapshot.SnapshotManager: SkipList is disabled
2025-09-23 19:50:31,256 INFO util.GSet: Computing capacity for map cachedBlocks
2025-09-23 19:50:31,256 INFO util.GSet: VM type       = 64-bit
2025-09-23 19:50:31,257 INFO util.GSet: 0.25% max memory 3.3 GB = 8.6 MB
2025-09-23 19:50:31,257 INFO util.GSet: capacity       = 2^20 = 1048576 entries
2025-09-23 19:50:31,267 INFO metrics.TopMetrics: NNTop conf: dfs.namenode.top.window.num.buckets
= 10
2025-09-23 19:50:31,267 INFO metrics.TopMetrics: NNTop conf: dfs.namenode.top.num.users = 10
2025-09-23 19:50:31,267 INFO metrics.TopMetrics: NNTop conf: dfs.namenode.top.windows.minutes =
1,5,25
2025-09-23 19:50:31,272 INFO namenode.FSNamesystem: Retry cache on namenode is enabled
2025-09-23 19:50:31,272 INFO namenode.FSNamesystem: Retry cache will use 0.03 of total heap and
retry cache entry expiry time is 600000 millis
2025-09-23 19:50:31,275 INFO util.GSet: Computing capacity for map NameNodeRetryCache
2025-09-23 19:50:31,275 INFO util.GSet: VM type       = 64-bit
2025-09-23 19:50:31,275 INFO util.GSet: 0.029999999329447746% max memory 3.3 GB = 1.0 MB
2025-09-23 19:50:31,275 INFO util.GSet: capacity       = 2^17 = 131072 entries
2025-09-23 19:50:31,301 INFO common.Storage: Lock on /hadoop/dfs/name/in_use.lock acquired by
nodename 87@namenode
2025-09-23 19:50:31,339 INFO namenode.FileJournalManager: Recovering unfinalized segments in
/hadoop/dfs/name/current
2025-09-23 19:50:31,369 INFO namenode.FileJournalManager: Finalizing edits file
/hadoop/dfs/name/current/edits_inprogress_0000000000000000001 ->
/hadoop/dfs/name/current/edits_0000000000000000001-0000000000000000007
2025-09-23 19:50:31,388 INFO namenode.FSImage: Planning to load image:
FSImageFile(file=/hadoop/dfs/name/current/fsimage_0000000000000000000,
cpktTxId=0000000000000000000)
2025-09-23 19:50:31,484 INFO namenode.FSImageFormatPBINode: Loading 1 INodes.
2025-09-23 19:50:31,531 INFO namenode.FSImageFormatProtobuf: Loaded FSImage in 0 seconds.
2025-09-23 19:50:31,531 INFO namenode.FSImage: Loaded image for txid 0 from
/hadoop/dfs/name/current/fsimage_0000000000000000000
2025-09-23 19:50:31,535 INFO namenode.FSImage: Reading
org.apache.hadoop.hdfs.server.namenode.RedundantEditLogInputStream@35229f85 expecting start txid
#1
2025-09-23 19:50:31,535 INFO namenode.FSImage: Start loading edits file
/hadoop/dfs/name/current/edits_0000000000000000001-0000000000000000007 maxTxnsToRead =
```

```
9223372036854775807
2025-09-23 19:50:31,537 INFO namenode.RedundantEditLogInputStream: Fast-forwarding stream
'/hadoop/dfs/name/current/edits_0000000000000000001-0000000000000000007' to transaction ID 1
2025-09-23 19:50:31,648 INFO namenode.FSImage: Loaded 1 edits file(s) (the last named
/hadoop/dfs/name/current/edits_0000000000000000001-0000000000000000007) of total size 1048576.0,
total edits 7.0, total load time 92.0 ms
2025-09-23 19:50:31,648 INFO namenode.FSNamesystem: Need to save fs image? false
(staleImage=false, haEnabled=false, isRollingUpgrade=false)
2025-09-23 19:50:31,649 INFO namenode.FSEditLog: Starting log segment at 8
2025-09-23 19:50:31,741 INFO namenode.NameCache: initialized with 0 entries 0 lookups
2025-09-23 19:50:31,741 INFO namenode.FSNamesystem: Finished loading FSImage in 461 msecs
2025-09-23 19:50:31,975 INFO namenode.NameNode: RPC server is binding to 0.0.0.0:9000
2025-09-23 19:50:32,004 INFO ipc.CallQueueManager: Using callQueue: class
java.util.concurrent.LinkedBlockingQueue, queueCapacity: 1000, scheduler: class
org.apache.hadoop.ipc.DefaultRpcScheduler, ipcBackoff: false.
2025-09-23 19:50:32,014 INFO ipc.Server: Starting Socket Reader #1 for port 9000
2025-09-23 19:50:32,143 INFO namenode.FSNamesystem: Registered FSNamesystemState,
ReplicatedBlocksState and ECBlockGroupsState MBeans.
2025-09-23 19:50:32,155 INFO namenode.LeaseManager: Number of blocks under construction: 0
2025-09-23 19:50:32,163 INFO blockmanagement.BlockManager: initializing replication queues
2025-09-23 19:50:32,163 INFO hdfs.StateChange: STATE* Leaving safe mode after 0 secs
2025-09-23 19:50:32,163 INFO hdfs.StateChange: STATE* Network topology has 0 racks and 0
datanodes
2025-09-23 19:50:32,163 INFO hdfs.StateChange: STATE* UnderReplicatedBlocks has 0 blocks
2025-09-23 19:50:32,176 INFO blockmanagement.BlockManager: Total number of blocks            = 1
2025-09-23 19:50:32,176 INFO blockmanagement.BlockManager: Number of invalid blocks          = 0
2025-09-23 19:50:32,176 INFO blockmanagement.BlockManager: Number of under-replicated blocks = 1
2025-09-23 19:50:32,176 INFO blockmanagement.BlockManager: Number of  over-replicated blocks = 0
2025-09-23 19:50:32,176 INFO blockmanagement.BlockManager: Number of blocks being written    = 0
2025-09-23 19:50:32,176 INFO hdfs.StateChange: STATE* Replication Queue initialization scan for
invalid, over- and under-replicated blocks completed in 13 msec
2025-09-23 19:50:32,182 INFO ipc.Server: IPC Server Responder: starting
2025-09-23 19:50:32,182 INFO ipc.Server: IPC Server listener on 9000: starting
2025-09-23 19:50:32,184 INFO namenode.NameNode: NameNode RPC up at: namenode/172.19.0.2:9000
2025-09-23 19:50:32,186 INFO namenode.FSNamesystem: Starting services required for active state
2025-09-23 19:50:32,186 INFO namenode.FSDirectory: Initializing quota with 4 thread(s)
2025-09-23 19:50:32,190 INFO namenode.FSDirectory: Quota initialization completed in 3
milliseconds
name space=3
storage space=588
storage types=RAM_DISK=0, SSD=0, DISK=0, ARCHIVE=0, PROVIDED=0
2025-09-23 19:50:32,193 INFO blockmanagement.CacheReplicationMonitor: Starting
CacheReplicationMonitor with interval 30000 milliseconds
2025-09-23 19:50:33,031 INFO hdfs.StateChange: BLOCK* registerDatanode: from
DatanodeRegistration(172.19.0.3:9866, datanodeUuid=f596791b-f5b2-4b98-8b4a-20e119c80f3f,
infoPort=9864, infoSecurePort=0, ipcPort=9867, storageInfo=lv=-57;cid=CID-931c6537-8fbe-4bcc-
b3f4-0efd4406b052;nsid=1853864144;c=1758653517014) storage f596791b-f5b2-4b98-8b4a-20e119c80f3f
2025-09-23 19:50:33,032 INFO net.NetworkTopology: Adding a new node:
/default-rack/172.19.0.3:9866
2025-09-23 19:50:33,032 INFO blockmanagement.BlockReportLeaseManager: Registered DN f596791b-
f5b2-4b98-8b4a-20e119c80f3f (172.19.0.3:9866).
2025-09-23 19:50:33,035 INFO hdfs.StateChange: BLOCK* registerDatanode: from
DatanodeRegistration(172.19.0.4:9866, datanodeUuid=ddffe429-6254-462b-912a-4dee1d91300f,
infoPort=9864, infoSecurePort=0, ipcPort=9867, storageInfo=lv=-57;cid=CID-931c6537-8fbe-4bcc-
b3f4-0efd4406b052;nsid=1853864144;c=1758653517014) storage ddffe429-6254-462b-912a-4dee1d91300f
2025-09-23 19:50:33,035 INFO net.NetworkTopology: Adding a new node:
/default-rack/172.19.0.4:9866
2025-09-23 19:50:33,035 INFO blockmanagement.BlockReportLeaseManager: Registered DN ddffe429-
6254-462b-912a-4dee1d91300f (172.19.0.4:9866).
```

2025-09-23 19:50:33,110 INFO blockmanagement.DatanodeDescriptor: Adding new storage ID DS-eda7ede1-6f0a-4310-8b5f-e36fc04b022d for DN 172.19.0.3:9866
2025-09-23 19:50:33,112 INFO blockmanagement.DatanodeDescriptor: Adding new storage ID DS-7f847090-8ed8-4b75-81ce-0fc226a064ce for DN 172.19.0.4:9866
2025-09-23 19:50:33,155 INFO BlockStateChange: BLOCK* processReport 0x7de06c2077407ae8: Processing first storage report for DS-eda7ede1-6f0a-4310-8b5f-e36fc04b022d from datanode f596791b-f5b2-4b98-8b4a-20e119c80f3f
2025-09-23 19:50:33,158 INFO BlockStateChange: BLOCK* processReport 0x7de06c2077407ae8: from storage DS-eda7ede1-6f0a-4310-8b5f-e36fc04b022d node DatanodeRegistration(172.19.0.3:9866, datanodeUuid=f596791b-f5b2-4b98-8b4a-20e119c80f3f, infoPort=9864, infoSecurePort=0, ipcPort=9867, storageInfo=lv=-57;cid=CID-931c6537-8fbe-4bcc-b3f4-0efd4406b052;nsid=1853864144;c=1758653517014), blocks: 1, hasStaleStorage: false, processing time: 2 msecs, invalidatedBlocks: 0
2025-09-23 19:50:33,158 INFO BlockStateChange: BLOCK* processReport 0x20790f07cb6a9ea4: Processing first storage report for DS-7f847090-8ed8-4b75-81ce-0fc226a064ce from datanode ddffe429-6254-462b-912a-4dee1d91300f
2025-09-23 19:50:33,158 INFO BlockStateChange: BLOCK* processReport 0x20790f07cb6a9ea4: from storage DS-7f847090-8ed8-4b75-81ce-0fc226a064ce node DatanodeRegistration(172.19.0.4:9866, datanodeUuid=ddffe429-6254-462b-912a-4dee1d91300f, infoPort=9864, infoSecurePort=0, ipcPort=9867, storageInfo=lv=-57;cid=CID-931c6537-8fbe-4bcc-b3f4-0efd4406b052;nsid=1853864144;c=1758653517014), blocks: 1, hasStaleStorage: false, processing time: 1 msecs, invalidatedBlocks: 0
Sep 23, 2025 7:52:32 PM com.sun.jersey.api.core.PackagesResourceConfig init
INFO: Scanning for root resource and provider classes in the packages:
  org.apache.hadoop.hdfs.server.namenode.web.resources
  org.apache.hadoop.hdfs.web.resources
Sep 23, 2025 7:52:33 PM com.sun.jersey.api.core.ScanningResourceConfig logClasses
INFO: Root resource classes found:
  class org.apache.hadoop.hdfs.server.namenode.web.resources.NamenodeWebHdfsMethods
Sep 23, 2025 7:52:33 PM com.sun.jersey.api.core.ScanningResourceConfig logClasses
INFO: Provider classes found:
  class org.apache.hadoop.hdfs.web.resources.UserProvider
  class org.apache.hadoop.hdfs.web.resources.ExceptionHandler
Sep 23, 2025 7:52:33 PM com.sun.jersey.server.impl.application.WebApplicationImpl _initiate
INFO: Initiating Jersey application, version 'Jersey: 1.19 02/11/2015 03:25 AM'
Sep 23, 2025 7:52:33 PM com.sun.jersey.spi.inject.Errors processErrorMessages
WARNING: The following warnings have been detected with resource and/or provider classes:
  WARNING: A sub-resource method, public javax.ws.rs.core.Response org.apache.hadoop.hdfs.server.namenode.web.resources.NamenodeWebHdfsMethods.putRoot(org.apache.hadoop.security.UserGroupInformation,org.apache.hadoop.hdfs.web.resources.DelegationParam,org.apache.hadoop.hdfs.web.resources.UserParam,org.apache.hadoop.hdfs.web.resources.DoAsParam,org.apache.hadoop.hdfs.web.resources.PutOpParam,org.apache.hadoop.hdfs.web.resources.DestinationParam,org.apache.hadoop.hdfs.web.resources.OwnerParam,org.apache.hadoop.hdfs.web.resources.GroupParam,org.apache.hadoop.hdfs.web.resources.PermissionParam,org.apache.hadoop.hdfs.web.resources.UnmaskedPermissionParam,org.apache.hadoop.hdfs.web.resources.OverwriteParam,org.apache.hadoop.hdfs.web.resources.BufferSizeParam,org.apache.hadoop.hdfs.web.resources.ReplicationParam,org.apache.hadoop.hdfs.web.resources.BlockSizeParam,org.apache.hadoop.hdfs.web.resources.ModificationTimeParam,org.apache.hadoop.hdfs.web.resources.AccessTimeParam,org.apache.hadoop.hdfs.web.resources.RenameOptionSetParam,org.apache.hadoop.hdfs.web.resources.CreateParentParam,org.apache.hadoop.hdfs.web.resources.TokenArgumentParam,org.apache.hadoop.hdfs.web.resources.AclPermissionParam,org.apache.hadoop.hdfs.web.resources.XAttrNameParam,org.apache.hadoop.hdfs.web.resources.XAttrValueParam,org.apache.hadoop.hdfs.web.resources.XAttrSetFlagParam,org.apache.hadoop.hdfs.web.resources.SnapshotNameParam,org.apache.hadoop.hdfs.web.resources.OldSnapshotNameParam,org.apache.hadoop.hdfs.web.resources.ExcludeDatanodesParam,org.apache.hadoop.hdfs.web.resources.CreateFlagParam,org.apache.hadoop.hdfs.web.resources.NoRedirectParam,org.apache.hadoop.hdfs.web.resources.StoragePolicyParam,org.apache.hadoop.hdfs.web.resources.ECPolicyParam) throws java.io.IOException,java.lang.InterruptedException, with URI template, "/", is treated as a resource method
  WARNING: A sub-resource method, public javax.ws.rs.core.Response org.apache.hadoop.hdfs.server.namenode.web.resources.NamenodeWebHdfsMethods.postRoot(org.apache.hadoop.security.UserGroupInformation,org.apache.hadoop.hdfs.web.resources.DelegationParam,org.apache.hadoop.hdfs.web.resources.UserParam,org.apache.hadoop.hdfs.web.resources.DoAsParam,org.apache.

hadoop.hdfs.web.resources.PostOpParam,org.apache.hadoop.hdfs.web.resources.ConcatSourcesParam,org
.apache.hadoop.hdfs.web.resources.BufferSizeParam,org.apache.hadoop.hdfs.web.resources.ExcludeDat
anodesParam,org.apache.hadoop.hdfs.web.resources.NewLengthParam,org.apache.hadoop.hdfs.web.resour
ces.NoRedirectParam) throws java.io.IOException,java.lang.InterruptedException, with URI
template, "/", is treated as a resource method
   WARNING: A sub-resource method, public javax.ws.rs.core.Response
org.apache.hadoop.hdfs.server.namenode.web.resources.NamenodeWebHdfsMethods.deleteRoot(org.apache
.hadoop.security.UserGroupInformation,org.apache.hadoop.hdfs.web.resources.DelegationParam,org.ap
ache.hadoop.hdfs.web.resources.UserParam,org.apache.hadoop.hdfs.web.resources.DoAsParam,org.apach
e.hadoop.hdfs.web.resources.DeleteOpParam,org.apache.hadoop.hdfs.web.resources.RecursiveParam,org
.apache.hadoop.hdfs.web.resources.SnapshotNameParam) throws
java.io.IOException,java.lang.InterruptedException, with URI template, "/", is treated as a
resource method
   WARNING: A sub-resource method, public javax.ws.rs.core.Response
org.apache.hadoop.hdfs.server.namenode.web.resources.NamenodeWebHdfsMethods.getRoot(org.apache.ha
doop.security.UserGroupInformation,org.apache.hadoop.hdfs.web.resources.DelegationParam,org.apach
e.hadoop.hdfs.web.resources.UserParam,org.apache.hadoop.hdfs.web.resources.DoAsParam,org.apache.h
adoop.hdfs.web.resources.GetOpParam,org.apache.hadoop.hdfs.web.resources.OffsetParam,org.apache.h
adoop.hdfs.web.resources.LengthParam,org.apache.hadoop.hdfs.web.resources.RenewerParam,org.apache
.hadoop.hdfs.web.resources.BufferSizeParam,java.util.List,org.apache.hadoop.hdfs.web.resources.XA
ttrEncodingParam,org.apache.hadoop.hdfs.web.resources.ExcludeDatanodesParam,org.apache.hadoop.hdf
s.web.resources.FsActionParam,org.apache.hadoop.hdfs.web.resources.SnapshotNameParam,org.apache.h
adoop.hdfs.web.resources.OldSnapshotNameParam,org.apache.hadoop.hdfs.web.resources.TokenKindParam
,org.apache.hadoop.hdfs.web.resources.TokenServiceParam,org.apache.hadoop.hdfs.web.resources.NoRe
directParam,org.apache.hadoop.hdfs.web.resources.StartAfterParam) throws
java.io.IOException,java.lang.InterruptedException, with URI template, "/", is treated as a
resource method
2025-09-23 19:52:34,099 INFO namenode.FSEditLog: Number of transactions: 2 Total time for
transactions(ms): 5 Number of transactions batched in Syncs: 7 Number of syncs: 2 SyncTimes(ms):
5
2025-09-23 19:52:34,143 INFO hdfs.StateChange: BLOCK* allocate blk_1073741826_1002,
replicas=172.19.0.3:9866, 172.19.0.4:9866 for /test/simple_data.json
2025-09-23 19:52:34,372 INFO namenode.FSNamesystem: BLOCK* blk_1073741826_1002 is COMMITTED but
not COMPLETE(numNodes= 0 < minimum = 1) in file /test/simple_data.json
2025-09-23 19:52:34,779 INFO hdfs.StateChange: DIR* completeFile: /test/simple_data.json is
closed by DFSClient_NONMAPREDUCE_-1237045239_71