

### **Practical No.-3**

**Aim:** Implement the following file management tasks in Hadoop:

- Adding files and directories
- Retrieving files from HDFS to local file system
- Deleting files from HDFS

**DESCRIPTION:** -

Hadoop Distributed File System (HDFS) is a distributed storage system that allows large-scale data storage and processing.

In this experiment, we perform basic file management operations in HDFS such as:

1. **Adding files and directories** → Creating directories and copying files from the local file system into HDFS.
2. **Retrieving files from HDFS** → Copying files from HDFS back to the local file system.
3. **Deleting files from HDFS** → Removing files and directories from HDFS.

These commands allow users to interact with HDFS in a way similar to Linux file commands, but they operate at the distributed storage level.

#### **Steps and Commands:**

Step 1: Connect to Hadoop using PuTTY

Download PuTTY: <https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html> Open

PuTTY and enter:

- Host name: maria\_dev@127.0.0.1 (or as given in your VirtualBox prompt)
- Port: 2222
- Connection type: SSH

Login with credentials:

- Username: maria\_dev
- Password: maria\_dev

Step 2: Create Directory in HDFS & Verify

```
[maria_dev@sandbox-hdp ~]$ hadoop fs -mkdir /user/maria_dev/testdir
[maria_dev@sandbox-hdp ~]$ hadoop fs -ls /user/maria_dev/
Found 2 items
drwxr-xr-x  - maria_dev hdfs      0 2025-09-14 13:37 /user/maria_dev/bdata
drwxr-xr-x  - maria_dev hdfs      0 2025-09-14 13:45 /user/maria_dev/testdir
[maria_dev@sandbox-hdp ~]$
```

Step 3: Create Empty File in HDFS & Verify

```
[maria_dev@sandbox-hdp ~]$ hadoop fs -touchz /user/maria_dev/testdir/file1.txt
[maria_dev@sandbox-hdp ~]$ hadoop fs -ls /user/maria_dev/testdir
Found 1 items
-rw-r--r-- 1 maria_dev hdfs          0 2025-09-14 13:53 /user/maria_dev/testdi
r/file1.txt
[maria_dev@sandbox-hdp ~]$
```

#### Step 4: Create Local File with Text & Display Content

```
[maria_dev@sandbox-hdp ~]$ echo "This is the first line." > /home/maria_dev/input.txt
[maria_dev@sandbox-hdp ~]$ echo "This is the second line." >> /home/maria_dev/input.txt
[maria_dev@sandbox-hdp ~]$ cat /home/maria_dev/input.txt
This is the first line.
This is the second line.
[maria_dev@sandbox-hdp ~]$
```

#### Step 5: Upload Local File to HDFS & Verify

```
[maria_dev@sandbox-hdp ~]$ hadoop fs -put -f /home/maria_dev/input.txt /user/maria_dev/testd
ir/file1.txt
[maria_dev@sandbox-hdp ~]$ hadoop fs -ls /user/maria_dev/testdir
Found 1 items
-rw-r--r-- 1 maria_dev hdfs          49 2025-09-14 14:05 /user/maria_dev/testdir/file1.txt
[maria_dev@sandbox-hdp ~]$
```

#### Step 6: Display File Content in HDFS

```
[maria_dev@sandbox-hdp ~]$ hadoop fs -cat /user/maria_dev/testdir/file1.txt
This is the first line.
This is the second line.
```

#### Step 7: Delete File & Verify

```
[maria_dev@sandbox-hdp ~]$ hadoop fs -rm /user/maria_dev/testdir/file1.txt
25/09/14 14:07:34 INFO fs.TrashPolicyDefault: Moved: 'hdfs://sandbox-hdp.hortonworks.com:8020
/user/maria_dev/testdir/file1.txt' to trash at: hdfs://sandbox-hdp.hortonworks.com:8020/user/
maria_dev/.Trash/Current/user/maria_dev/testdir/file1.txt1757858854393
[maria_dev@sandbox-hdp ~]$ hadoop fs -ls /user/maria_dev/testdir
[maria_dev@sandbox-hdp ~]$
```

#### Step 8: Delete Directory & Verify

```
[maria_dev@sandbox-hdp ~]$ hadoop fs -rm -r /user/maria_dev/testdir
25/09/14 14:08:46 INFO fs.TrashPolicyDefault: Moved: 'hdfs://sandbox-hdp.hortonworks.com:8020
/user/maria_dev/testdir' to trash at: hdfs://sandbox-hdp.hortonworks.com:8020/user/maria_dev/
.Trash/Current/user/maria_dev/testdir1757858926864
[maria_dev@sandbox-hdp ~]$ hadoop fs -ls /user/maria_dev/
Found 2 items
drwx----- - maria_dev hdfs          0 2025-09-14 14:04 /user/maria_dev/.Trash
drwxr-xr-x - maria_dev hdfs          0 2025-09-14 13:37 /user/maria_dev/bdata
[maria_dev@sandbox-hdp ~]$
```

### Conclusion:

All file management tasks in HDFS were successfully performed:

- Created directories and files.
- Added content to a file.
- Retrieved file content.
- Deleted files and directories.