

**Ex No 1****Downloading and installing Hadoop on Mac, Understanding different Hadoop modes, Startup scripts, Configuration files.****AIM:**

**To Download and install Hadoop, Understanding different Hadoop modes, Startup scripts, Configuration files.**

**PROCEDURE:****Step 1: Download/Update Homebrew**

To set up Hadoop on a Mac OS we need to have Homebrew installed on our system. Homebrew is a package manager specifically designed for the Mac operating system making it simple to install Unix applications. Homebrew you can easily install it by following the instructions provided at this link:

<https://brew.sh/>

Alternatively you can quickly install Homebrew by typing the following command into your terminal:

```
/bin/bash -c "$(curl -fsSL  
https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

Update the repository index of the Homebrew package installer. This can be done through the brew update command.

```
brew update
```

Add below lines to **.bash\_profile** or **.zprofile** `eval`

`"$(/opt/homebrew/bin/brew shellenv)"` **Step**

## **2: Install Java 1.8 version**

Confirm the correct version of java (version 8) installed on the machine. If any other version than 1.8., **make sure to install 1.8 as Hadoop 3.3.6/3.4.0 have dependency and only supported in Java 1.8 versions**

Brew command to cast Java to version 8 / install java 8 using brew `brew install`  
`- cask homebrew/cask-versions/adoptopenjdk8`

Add below lines to **.bash\_profile** or **.zprofile** `export`

`JAVA_HOME=$(/usr/libexec/java_home)`

`java -version` `openjdk`

version `"1.8.0_292"`

OpenJDK Runtime Environment (AdoptOpenJDK)(build `1.8.0_292-b10`)

OpenJDK `64`-Bit Server VM (AdoptOpenJDK)(build `25.292-b10`, mixed mode)

## **Step 3: Install Hadoop 3.3.6/3.4.0 using homebrew**

To install hadoop use brew command: `brew install`  
`hadoop`

*Check your installed hadoop version 3.3.6/3.4.0* `hadoop`  
version

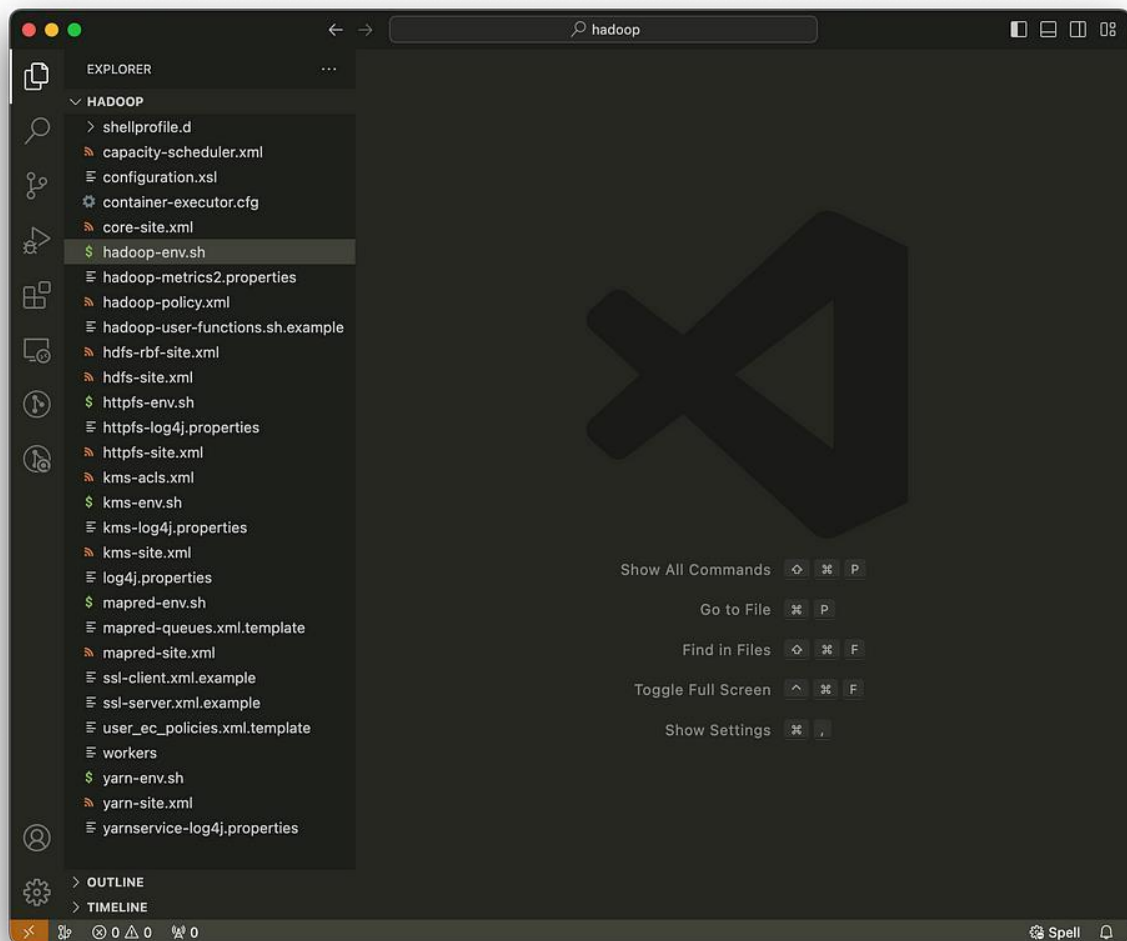
Move to hadoop directory and verify the files/path : `cd`

`/opt/homebrew/Cellar/hadoop/3.4.0` or `cd`  
`/opt/homebrew/Cellar/hadoop/3.3.6` based on *hadoop* version **Step**  
**4: Updated Hadoop config files -> 5 files**

Go into the directory: `cd`

`/opt/homebrew/Cellar/hadoop/3.4.0/libexec/etc/hadoop`

Open this directory in any code editor of choice. E.g — vscode, and update following files with the given code add in the end.



Get Java home path using below command:

```
/usr/libexec/java_home
```

-> **FILE 1: *hadoop-env.sh***

Add the code line to the end of the file and replace the path with your Java home path from your local system

```
export
```

```
JAVA_HOME=/Library/Java/JavaVirtualMachines/adoptopenjdk-8.jdk/Contents/Home
```

Following are file names and code to add to configure hadoop:

-> **FILE 2: *core-site.xml***

```
<configuration>
<property>
<name>fs.defaultFS</name>
<value>hdfs://localhost:9000</value>
<final>true</final>
</property>
</configuration>
```

-> **FILE 3: *hdfs-site.xml***

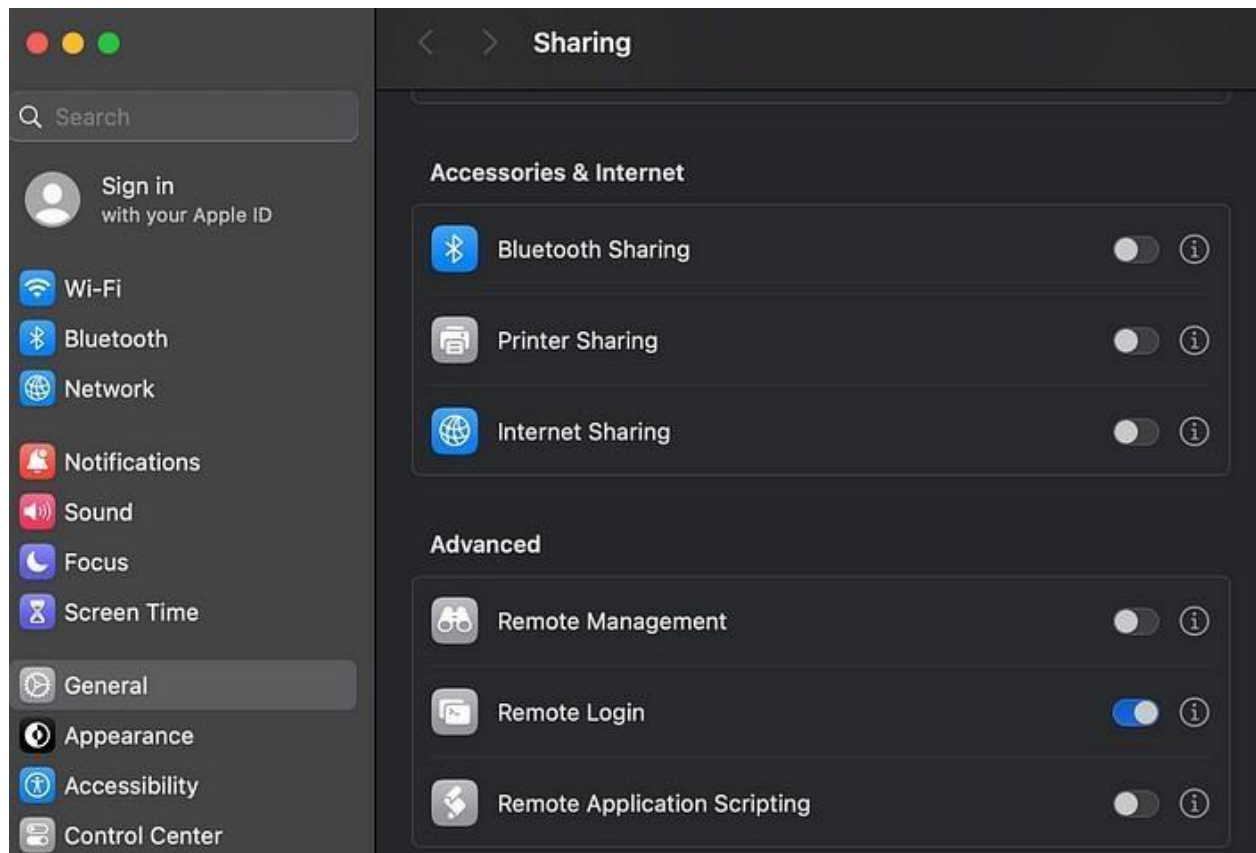
```
<configuration>
<property>
<name>dfs.replication</name>
<value>1</value>
</property>
</configuration>
```

-> **FILE 4: *mapred-site.xml***

```
<configuration>
<property>
<name>yarn.app.mapreduce.am.env</name>
<value>HADOOP_MAPRED_HOME=/opt/homebrew/opt/hadoopp</value>
```

```
</property>
<property>
<name>mapreduce.map.env</name>
<value>HADOOP_MAPRED_HOME=/opt/homebrew/opt/hadoop</value>
</property>
<property>
<name>mapreduce.reduce.env</name>
<value>HADOOP_MAPRED_HOME=/opt/homebrew/opt/hadoop</value>
</property>
</configuration>
-> FILE 5: yarn-site.xml
<configuration>
<property>
<name>yarn.nodemanager.aux-services</name>
<value>mapreduce_shuffle</value>
</property>
</configuration>
```

Also, Now open **System Preferences** and open Sharing and select Remote Login



## Step 5: Format HDFS and Start Hadoop

Run following commands to start hadoop: `hadoop namenode`

`-format`

Start hadoop: `start-all.sh`

You can stop hadoop by using command : **`stop-all.sh`**

If Error: [Hadoop "Permission denied \(publickey,password,keyboard-interactive\)" warning](#)

Proceed with the following steps:

1. Generate new keygen.

`ssh-keygen -t rsa -P "" -f ~/.ssh/id_rsa` 2.

Register key gen: `cat ~/.ssh/id_rsa.pub >>`

`~/.ssh/authorized_keys`

You can start hadoop by using command : **start-all.sh**

We can verify if all processes are running in machine using this command. jps



```
vikramchoudhary — zsh — 80x8
vikramchoudhary@Vikrams-MBP ~ % jps
5216 ResourceManager
4883 DataNode
5317 NodeManager
4780 NameNode
10190 Jps
5022 SecondaryNameNode
vikramchoudhary@Vikrams-MBP ~ %
```

<http://localhost:9864/>

<http://localhost:8088/cluster>

## RESULT:

The step-by-step installation and configuration of Hadoop on Mac system have been successfully completed.