

# Apache Hadoop 3 Installation on Redhat Based Operating Systems – CentOS Operating System

## Hadoop 3.x Installation Steps:-

### Note:-

- ➔ It supports all operating system. Recommended is Linux or UNIX operating system.
- ➔ Operating System should be installed.

### There are steps involves in Hadoop Installation. They are:-

1. Pre-Installation Steps
2. Installation Steps
3. Post-Installation Steps.

### Pre-Installation Steps:-

1. Install Java – Recommended is Java 8 (Java 1.8)
2. Setup Passwordless SSH

### Installation Steps:-

1. Download and Install Latest Version of Hadoop.

### Post-Installation Steps:-

1. Configure Hadoop
2. Format NameNode

Once Pre-Installation Steps and Installation Steps are completed we can Local Mode is Completed.

Local Mode or Standalone Mode = Pre-Installation Steps + Installation Steps

### Pre-Installation Steps:-

1. Install Java – Recommended is Java 8 (Java 1.8)
2. Setup Passwordless SSH

### Why Java?

- ➔ Hadoop software developed using Java Language. So we need install Java before install Hadoop.

### Why Passwordless SSH?

- ➔ In pSudo Distribution Mode and Fully Distribution all daemons runs on separate JVM on separate machines.
- ➔ Here To communicate with One daemon to another daemon it uses SSH protocol.

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- SSH protocol requires password. So to avoid enter password at runtime we are setuping Password less SSH.

### Java 8 Installation on CentOS 8: -

- We use .rpm file and we use **yum** command to install.

### Steps to Install Java 8: -

**Step1: -** Download Java 8 (Most of Software's are support) or Later

**Step2: -** Install Java

**Step3:-** Set JAVA\_HOME and PATH Variable

**Step4:-** Verify Java is Installed or not

### Download Java 8 (Most of Software's are support) or Later: -

- Java Vendor is Oracle Corporation

<https://www.oracle.com/in/java/technologies/javase/javase-jdk8-downloads.html>

\$cd /opt

\$sudo wget -c --header "Cookie: oraclelicense=accept-securebackup-cookie"

<https://download.oracle.com/otn-pub/java/jdk/8u301-b09/d3c52aa6bfa54d3ca74e617f18309292/jdk-8u301-linux-x64.rpm>

### Install Java: -

\$ sudo yum install jdk-8u301-linux-x64.rpm -y

It installs in below path

/usr/java/jdk1.8.0\_301-amd64

### Set JAVA\_HOME and PATH Variable: -

#### Why JAVA\_HOME?

- Many software's implemented using Java Language like Hadoop, Maven, Scala, etc..
- All these software's require JAVA to run that Software's.
- Software's which developed uses JAVA\_HOME

JAVA\_HOME=/usr/java/jdk1.8.0\_301-amd64

#### Why PATH Variable?

/usr/java/jdk1.8.0\_301-amd64/bin – Here we have all java commands or binaries

PATH=/usr/java/jdk1.8.0\_301-amd64/bin

**In Windows,** we use Environment variables to set JAVA\_HOME and PATH variable.

**In Linux,** we have profile file like .bashrc, profile files executes automatically when user login

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```
$nano ~/.bashrc
#JAVA_HOME
export JAVA_HOME=/usr/java/jdk1.8.0_301-amd64
export PATH=$PATH:$JAVA_HOME/bin
```

ctrl+x+y → To save and quit from nano prompt

### Restart .bashrc:-

```
$ source ~/.bashrc
```

### Verify Java is Installed or not:-

```
$java -Version
$java
$javac
```

### Passwordless SSH Setup:-

- ➔ SSH – Secure Shell
- ➔ Can be used to get remote terminal
- ➔ In Hadoop It uses SSH for communication
  - NameNode Communicates with DataNode
  - DataNode Communicates with NameNode
  - SecondaryNameNode Communicates with NameNode
  - ResourceManager Communicates with NameNode
  - ResourceManager Communicates with NodeManager
  - NodeManager Communicates with ResourceManager
  - Here these service or daemons uses SSH Protocol
- ➔ SSH requires password

```
[cfamily@cfamily ~]$ ssh localhost
cfamily@localhost's password:
Last login: Fri Jul 30 16:00:10 2021 from 192.168.1.11
[cfamily@cfamily ~]$ exit
logout
Connection to localhost closed.
```
- ➔ Setup Passwordless SSH

```
$ssh-keygen -t rsa
$cat ~/.ssh/id_rsa.pub >> ~/.ssh/authorized_keys
$chmod og-wx ~/.ssh/authorized_keys
```

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→ Now verify Passwordless working or not

```
$ ssh localhost
```

```
Last login: Fri Jul 30 16:27:02 2021 from ::1
```

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