

# Java Setup on Linux: A Complete Tutorial

This tutorial will guide you through checking for Java installation and setting up the JAVA\_HOME environment variable on Linux (Ubuntu/Debian-based systems).

## Prerequisites:

- A Linux system (Ubuntu/Debian)
- Terminal access
- sudo privileges (for installation only)

## Step 1: *Check if Java is Installed First, check if Java Runtime Environment (JRE) is installed:*

bash:      `java -version`

*Expected output if Java is installed:*

```
openjdk version "21.0.10" 2026-01-20 OpenJDK Runtime Environment  
(build 21.0.10+7-Ubuntu-124.04) OpenJDK 64-Bit Server VM (build  
21.0.10+7- Ubuntu-124.04, mixed mode, sharing)
```

*If Java is not installed, you'll see: Command 'java' not found*

## Step 2: *Check if Java Development Kit (JDK) is Installed*

To compile Java programs, you need the JDK (not just JRE):

bash `javac -version`

*Expected output if JDK is installed:*      `javac 21.0.10`

*If only JRE is installed:*                    `javac: command not found`

## Step 3: *Install Java (if needed)*

Install JRE only (for running Java applications):

bash `sudo apt update` `sudo apt install default-jre`

Install JDK (for developing Java applications):

```
bash sudo apt update  
sudo apt install default-jdk
```

Install a specific OpenJDK version: bash `sudo apt install openjdk-21-jdk`

**Step 4:** *Locate Your Java Installation* - Find where Java is installed on your system:

```
bash which java
```

This shows the executable location (usually /usr/bin/java ).

*To find the actual installation directory (following symlinks):*

```
bash readlink -f $(which java) Example output: /usr/lib/jvm/java-21-openjdk-amd64/bin/java
```

The JAVA\_HOME path is everything before /bin/java , so in this case:  
/usr/lib/jvm/java-21-openjdk-amd64

**Step 5:** *Check if JAVA\_HOME is Set*

```
bash echo $JAVA_HOME If nothing is displayed, JAVA_HOME is not set.
```

**Step 6:** *Set JAVA\_HOME Environment Variable:*

*Method 1:* Using echo commands bash echo 'export

```
JAVA_HOME=/usr/lib/jvm/java-21-openjdk-amd64' >> ~/.bashrc echo 'export  
PATH=$JAVA_HOME/bin:$PATH' >> ~/.bashrc source ~/.bashrc
```

*Method 2: Manual editing*

Open your .bashrc file:

```
bash nano ~/.bashrc
```

Add these lines at the end:

```
bash export JAVA_HOME=/usr/lib/jvm/java-21-openjdk-amd64 export  
PATH=$JAVA_HOME/bin:$PATH Save and exit (Ctrl+X, then Y, then Enter).
```

Apply the changes:

```
bash source ~/.bashrc
```

**Step 7:** *Verify JAVA\_HOME is Set:*

```
bash echo $JAVA_HOME
```

Expected output: /usr/lib/jvm/java-21-openjdk-amd64