

# Set up Java

Setting up Java on a machine involves a few straightforward steps. Here's a basic guide to get you started:

## 1. Download the JDK

- Visit one of the reliable sources for downloading the JDK. For example:
  - [Oracle JDK Downloads](#)
  - [OpenJDK Downloads](#)
  - [AdoptOpenJDK / Eclipse Temurin](#)

## 2. Install the JDK

- Follow the installation instructions for your operating system.

### On Windows:

1. Run the downloaded installer.
2. Follow the installation wizard instructions.
3. By default, the JDK is installed in `C:\Program Files\Java\jdk-xx`.

### On macOS:

1. Open the downloaded `.dmg` file.
2. Drag and drop the JDK package into the `Applications` folder.

### On Linux:

- For Debian-based distributions (e.g., Ubuntu):

```
sudo apt update
sudo apt install openjdk-xx-jdk
```

- For RPM-based distributions (e.g., Fedora):

```
sudo dnf install java-xx-openjdk
```

### 3. Set Up Environment Variables

- After installation, you need to set up the `JAVA_HOME` environment variable and update the `PATH`.

#### On Windows:

1. Open the Start Menu, search for "Environment Variables," and select "Edit the system environment variables."
2. In the System Properties window, click the "Environment Variables" button.
3. In the Environment Variables window, click "New" under System variables.
4. Set the variable name to `JAVA_HOME` and the variable value to the JDK installation path (e.g., `C:\Program Files\Java\jdk-xx`).
5. Find the `Path` variable in the System variables section, select it, and click "Edit."
6. Click "New" and add `%JAVA_HOME%\bin`.

#### On macOS and Linux:

1. Open a terminal.
2. Edit the profile file (e.g., `~/.bash_profile`, `~/.bashrc`, `~/.zshrc`) with a text editor.
3. Add the following lines:

```
export JAVA_HOME=/path/to/jdk
export PATH=$JAVA_HOME/bin:$PATH
```

4. Save the file and run `source ~/.bash_profile` (or the appropriate file) to apply the changes.

### 4. Verify the Installation

- Open a terminal or command prompt.

- Type `java -version` and `javac -version` to ensure the commands are recognized and display the installed versions.

```
java -version
javac -version
```

If the setup is correct, you should see the version information for both Java and the Java compiler ( `javac` ).

## 5. Test with a Simple Program

- Create a simple Java program to test your setup.

```
public class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello, World!");
    }
}
```

- Save the file as `HelloWorld.java` .
- Compile it using `javac HelloWorld.java` .
- Run it using `java HelloWorld` .

If everything is set up correctly, you should see `Hello, World!` printed in the terminal or command prompt.