

# Maven Installation on AWS EC2 Instance

## Introduction

Maven is a powerful build automation tool primarily used for Java projects. This guide will walk you through installing Apache Maven on an AWS EC2 instance step by step.

## Step 1: Launch an EC2 Instance

Log in to your AWS Management Console.

Navigate to EC2 Dashboard and click on Launch Instance.

Configure the instance:

AMI: Select Amazon Linux 2 or Ubuntu.

Instance Type: Choose t2.micro (Free Tier eligible).

Key Pair: Create or use an existing key pair.

Security Group: Allow SSH (port 22) access.

Storage: Keep default or adjust as required.

Click Launch Instance and connect via SSH:

```
ssh -i your-key.pem ec2-user@your-ec2-public-ip
```

## Step 2: Install Java (Required for Maven)

Update the package manager:

```
sudo yum update -y
```

Install Java:

```
sudo yum install java-11-amazon-corretto -y
```

Verify Java installation:

```
java -version
```

## Step 3: Install Apache Maven

### Download Maven:

```
wget https://dlcdn.apache.org/maven/maven-3/3.9.5/binaries/apache-maven-3.9.5-bin.tar.gz
```

### Extract the downloaded file:

```
tar -xvzf apache-maven-3.9.5-bin.tar.gz
```

### Move Maven to /opt/maven:

```
sudo mv apache-maven-3.9.5 /opt/maven
```

### Set up environment variables:

```
echo "export M2_HOME=/opt/maven" | sudo tee -a /etc/profile
```

```
echo "export PATH=\$M2_HOME/bin:\$PATH" | sudo tee -a /etc/profile
```

```
source /etc/profile
```

### Verify Maven installation:

```
mvn -version
```

## Step 4: Install and Configure Git

### Install Git:

```
sudo yum install git -y
```

### Verify installation:

```
git --version
```

### Set Git username and email:

```
git config --global user.name "Your Name"
```

```
git config --global user.email "your-email@example.com"
```

## Step 5: Configure SSH for GitHub (Optional)

### Generate an SSH key:

```
ssh-keygen -t rsa -b 4096 -C "your-email@example.com"
```

### Display the public key:

```
cat ~/.ssh/id_rsa.pub
```

Add SSH key to GitHub:

Go to GitHub > Settings > SSH and GPG keys.

Click New SSH Key, paste the copied key, and save.

Test SSH connection:

```
ssh -T git@github.com
```

Expected output:

```
Hi <your-github-username>! You've successfully authenticated, but GitHub
does not provide shell access.
```

## Step 6: Push a Maven Project to GitHub (Optional)

Initialize Git in the Maven project directory:

```
cd your-maven-project
```

```
git init
```

Add GitHub remote repository:

```
git remote add origin git@github.com:your-username/your-repo.git
```

Stage and commit project files:

```
git add .
```

```
git commit -m "Initial Maven project commit"
```

Push project to GitHub:

```
git push -u origin main
```