TOPIC : MAVEN INSTALLATIION AND ADV&DISDVATANGES

NAME : MULAGADA DILEEP KUMAR

Maven Installation on Amazon AWS

1. **Launch an EC2 Instance**

- Log in to the aws management console.
- Navigate to the ec2 dashboard and launch a new instance.
- Choose an amazon linux or ubuntu ami.
- Configure instance details, security groups, and launch the instance.

2. **Connect to the EC2 Instance**

- Use ssh to connect to your instance:

ssh -i your-key.pem ec2-user@your-instance-ip

3. **Install Java** (Required for Maven)

- Check if java is installed:

Java -version

- If not installed, install java:

sudo yum install java-11-amazon-corretto -y (for amazon linux)

4. **Install Maven**

- For amazon linux:

sudo yum install maven -y

5. **Verify Maven Installation**

- Check the installed version:

mvn -version

Maven in Devops Maven plays a crucial role in devops by automating the build and dependency management process. It is widely used in continuous integration and continuous deployment (ci/cd) pipelines. Some key roles of maven in devops include:

- **Automated Builds**: maven simplifies the build process by managing dependencies and executing build tasks using predefined lifecycle phases.

- **Integration with ci/cd Tools**: It works seamlessly with jenkins, gitlab ci, and other ci/cd tools to automate builds, testing, and deployment.
- **Dependency Management**: maven automatically downloads and manages project dependencies, ensuring consistency across different environments.
- **Standardization**: It enforces a standardized project structure and build process, making it easier for teams to collaborate.
- **Testing Automation**: maven supports running unit tests and integration tests as part of the build process.

General Maven Commands :

- **Check Maven Version**:

mvn -version

- **Clean the Project**:

mvn clean

- **Compile the Project**:

mvn compile

- **Package the Project into a jar/war**:

mvn package

- **Run Unit Tests**:

mvn test

- **Install the Project Locally**:

mvn install

- **Deploy the Project**:

mvn deploy

- **Generate a Site Report**:

mvn site

Advantages of Maven

- **Automated Dependency Management**: maven simplifies dependency management by automatically downloading required libraries.
- **Consistent Project Structure**: Enforces a standard directory layout, making projects easy to understand and maintain.

- **Easy Integration with ci/cd**: Seamlessly integrates with tools like jenkins, bamboo, and gitlab ci.
- **Build Lifecycle Management**: maven provides a predefined build lifecycle, reducing the complexity of manual build scripts.
- **Large Community Support**: Being widely used, maven has extensive documentation and community support.

Disadvantages of Maven

- **xml Configuration Complexity**: Managing dependencies and build configurations through pom.xml can be complex for large projects.
- **Performance Overhead**: maven may download large dependency files, leading to increased build times.
- **Steep Learning Curve**: Beginners may find it difficult to understand the maven build lifecycle and configuration files.
- **Network Dependency**: maven requires internet access to download dependencies, which can be a limitation in restricted environments.