

Difference Between Apache Ant and Maven

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Key Difference - Apache Ant vs Maven

There are many activities involved in [software](#) development. So, it is necessary to have some kind of an automation mechanism. Therefore, the developer can use software tools. Build automation is the process of scripting or automating a variety of tasks that software developers perform. Some of them are, compiling the source code, packaging binary code, running automated tests and deploying to production. It is also important to create documentation and release notes. To make these activities simple and easier, developers can use software tools. Two of them are Apache Ant and Maven. The **key difference** between Apache Ant and Maven is that **Apache Ant is a software tool for automating software build processes while Maven is a software project management tool**. Maven is more than a tool for automating software build processes. It helps to manage the project.

What is Apache Ant?

Ant stands for Another Neat Tool. It is based on [Java](#). When developing software, programmers go through several activities. Some of them are compiling the code, packaging the binaries, deploying the binaries to the server. It is also necessary to test the changes. In a large project, it might be needed to copy the code from one place to another. These activities can be done using Apache Ant.

Ant scripts are written in [XML](#). It is a text-based markup language, so it is easy to use XML. XML is used to store and arrange data that can customize data handling needs. Familiarity with XML helps to write Ant scripts. It also has an interface to develop custom tasks. It can be integrated into a Development Environment (IDE) or directly executed using the command line. Overall, it is a complete and popular build and deployment tool. It is used for automating repetitive tasks.

What is Maven?

Maven is a project management tool. It is a complete build life cycle framework. By using Maven, developers can handle builds, documentation, reporting, dependencies, distribution and releases. It performs compilation, distribution, documentation and team collaboration. Maven is mainly used for Java projects.

It uses convention over configuration, so the developers do not require to create build process themselves. Maven repository is a directory of packaged JAR file with pom.xml file. A JAR is a package that compacts many Java class files and resources into one file for distribution. The pom stands for Project Object Model. It contains configuration

information to build the project. It consists of dependencies, source directory, build directory, plug-ins etc.



Maven dependencies are in the repository. There are three types of repositories. They are a local repository, central repository and remote repository. Maven searches the local repository first. Then central repository and finally the remote repository. The local repository is the local computer. It is created when a Maven command runs. Location of the local repository can be changed using setting.xml file. Maven central repository and the remote repository is on the web. Overall, Maven provides easy build process and makes developing and managing the project easier.

What are the Similarities Between Apache Ant and Maven?

- Both can use as build and deployment tool.
- Both were developed by Apache Software Foundation.

What is the Difference Between Apache Ant and Maven?

Apache Ant vs Maven	
Apache Ant is software tool for automating software build processes.	Maven is a software project management and comprehension tool.
Main Task	
Apache Ant is a build tool.	Maven is more than a build tool. It provides project management, dependency resolving etc.

Approach	
Ant uses an imperative approach. The programmer should specify in the Ant build file (build.xml) what actions to take.	Maven uses a declarative approach. The programmer has to define using pom.xml file.
Life Cycle	
Ant has no life cycle.	Maven has build lifecycles, Phases and Goals.
Directory Layout	
Ant has no default directory layout.	Maven has a default directory layout.
Reusability	
Apache Ant scripts are not reusable.	Maven build is reusable as a plug-in.
Preference	
Apache Ant is less preferred than Maven.	Maven is more preferred than Apache Ant.

Summary - Apache Ant vs Maven

Developers can use software tools make development activities easier and manageable. Some of them are Sbt, Tup, Gradle and Visual Build. The difference between Apache Ant and Maven is that Apache Ant is a software tool for automating software build processes while Maven is a software project management tool. Maven is more than a tool for automating software build processes. Overall, Maven is more flexible than Ant.

Reference:

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