**Ant**

Ant is a build tool which automates compilation, packaging, deployment and undeployment of applications. This tool receives instruction in the form of xml. Conventionally an xml file name **bulid.xml** is created to specify the tasks which are to be performed by Ant.

**Element of bulid.xml**

1- <project> :  
 Is the root element it specifies a set of task.  
<project name=”peojectName” default=”Name of target to be executed first” basedir=”directory to which all paths are resolved” >

2- <taget>:  
 Is a sub element of project. A target represent set of logically related task these may be multiple target in an Ant project and these target may have dependency over each other.

<target name=”targetName” depends=”name of target \*”>

Ant **task** to be performed

</target>

Ant tasks are predefined xml elements which ask the Ant to perform a specific operation. More than hundred Ant task are defined.

**Commonly used Ant task are:**1- <echo>:  
 Is used to display message on the console.  
Syntax:  
<echo message=”Message to be dispalyed” />

2- <javac>:  
 Is used to compile java classes.  
Syntax:   
<javac srcDir=”SourceDirectory” destDir=”DestinationDir” />

3-<java>:  
 Is used to ececute a java class.  
Syntax:  
<java className=”Name of class containing main() method” />

4-<mkdir>:  
 Is used to create a folder.  
Syntax:

<mkdir dir=”Name of directory”>

5-<delete>:  
 Is used to delete a folder including its content.  
Syntax:  
<delete dir=”Name of directory” />  
etc…..

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| **Note:** In order to use Ant, jar files and batch file of Ant must be available in the **path**. Web server vendors used Ant building tool for making directory structure for deploying web application that is Ant jar files and batch file is available in the web application library. **Path of Ant jar files and batch file in weblogic application server: C:\bea\weblogic81\server\bin**  Paste this path in **path environment** variable.  **Syntax of starting Ant:** |

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| --- | --- |
| 1-  <project name="demo" default="one" basedir=".">  <target name="one">  <echo message="One task is display" />  </target>  </project> | **Output:** E:\Program\Ant>ant  Buildfile: build.xml  one:  [echo] One task is display  BUILD SUCCESSFUL  Total time: 0 seconds |
| 2-  <project name="demo" default="**one**" basedir=".">  <target name="one" depends="**two**">  <echo message="One task is display" />  </target>  <target name="**two**">  <echo message="two task is display" />  </target>  </project> | **Output:** E:\Program\Ant>ant  Buildfile: build.xml  two:  [echo] two task is display  one:  [echo] One task is display  BUILD SUCCESSFUL  Total time: 0 seconds |
| 3-  <project name="demo" default="execute" basedir=".">  <target name="execute" depends="compile">  <java className="A" />  </target>  <target name="compile">  <javac srcDir="." destDir="." />  </target>  </project> | **public** class A  {  public static void main(String args[])  {  System.out.println("I am ok............");  }  } |
| **Output:** E:\Program\Ant>ant  Buildfile: build.xml  compile:  [javac] Compiling 1 source file to E:\Program\Ant  execute:  [java] I am ok............  BUILD SUCCESSFUL  Total time: 1 second | |

6- <war>:  
 <war> ant task is used to package contents of a web application in a war file.

Syntax:  
**<war destFile=”Name of war file” webxml=”Name of Deployment descriptor”>**

<fileset dir=”Name of directory contents of which are to be moved under app folder”>\*

<include name=”pattern to select files for inclusion” />  
 o o o o o o o o o o o o o o

</fileset>

<classes dir=”Name of directory contents of which are to be moved to /WEB-INF/classes folder” />\*

<lib dir=”Name of directory contents of which are to be moved to /WEB-INF/lib folder” />\*

**</war>**

**\*- denotes optional**

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| --- | --- |
| **For auto packaging web application** | **For auto packaging web application using property** |
| <project name="packaging" default="cleanup" basedir=".">  <target name="prepare">  <mkdir dir="temp" />  </target>  <target name="compile" depends="prepare">  <javac srcDir="src" destDir="temp" />  </target>  <target name="package" depends="compile">  <war destFile="abc.war" webxml="web.xml">  <fileset dir=".">  <include name="\*.html" />  <include name="\*.jsp" />  </fileset>  <classes dir="temp" />  </war>  </target>  <target name="cleanup" depends="package">  <delete dir="temp" />  </target>  </project> | <project name="packaging" default="cleanup" basedir=".">  **<property name="dest" value="temp" />**  **<property name="warFile" value="demo.war" />**  <target name="prepare">  <mkdir dir=**"${dest}"** />  </target>  <target name="compile" depends="prepare">  <javac srcDir="src" destDir=**"${dest}"** />  </target>  <target name="package" depends="compile">  <war destFile=**"${warFile}"** webxml="web.xml">  <fileset dir=".">  <include name="\*.html" />  <include name="\*.jsp" />  </fileset>  <classes dir=**"${dest}"** />  </war>  </target>  <target name="cleanup" depends="package">  <delete dir=**"${dest}"** />  </target>  </project> |