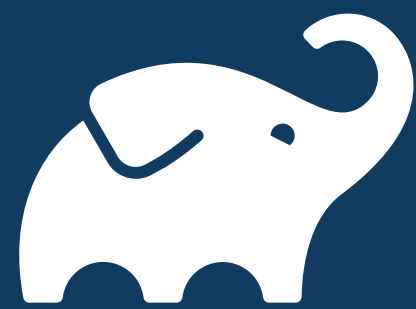




# ABOUT



# Gradle Build Tool



/RaminZare



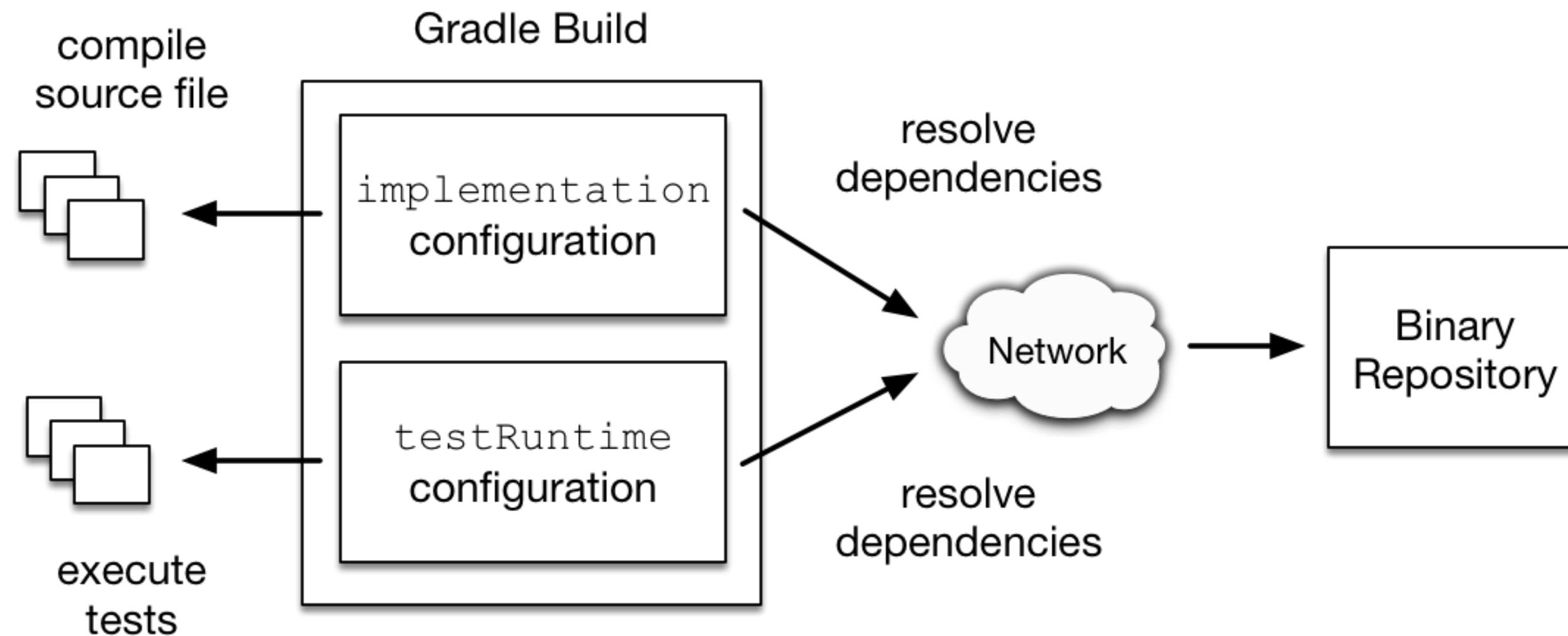
# What is a build tool?

PROCESS OF AUTOMATING CREATION OF A SOFTWARE BUILD

- compiling source code
- packaging binary code
- running automated tests

# Dependency Resolution

## PROCESS OF AUTOMATING CREATION OF A SOFTWARE BUILD





A collection of vintage tools including a hammer, pliers, a saw, and a wrench, arranged on a dark wooden surface.

# Running Tasks





<https://maven.apache.org/>

- Conventions over configurations
- XML based

# Gradle

<https://gradle.org/>





A collection of vintage tools including a hammer, pliers, a saw, and a wrench, arranged on a dark wooden surface.

# Gradle DSL



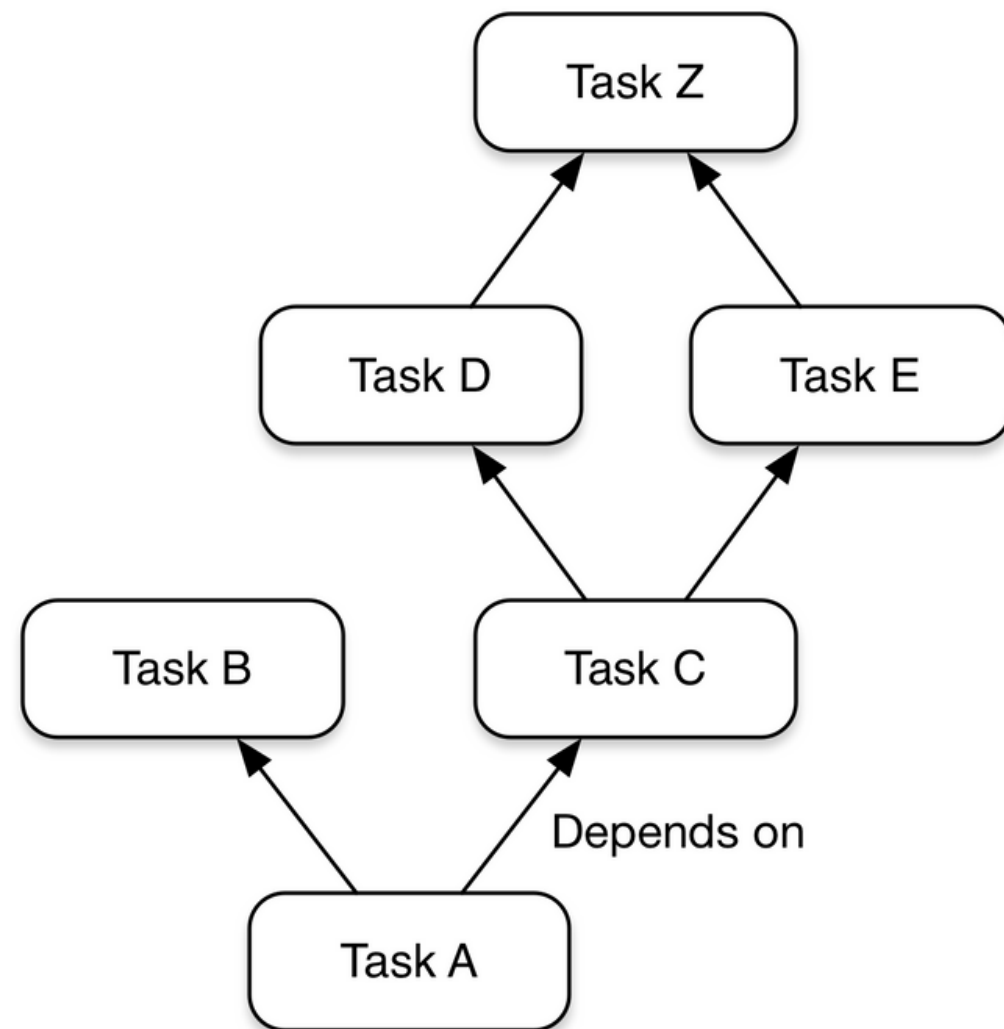


# Gradle is general-purpose

- Conventions via plugins
- Building any software
- Task based model



# Tasks



## ACTIONS

pieces of work that do something

## INPUT

values, files and directories

## OUTPUT

files and directories

# Task outcomes



**FAILED**



**SUCCESS**



**UP\_TO\_DATE**



**FROM\_CACHE**



**NO\_SOURCE**

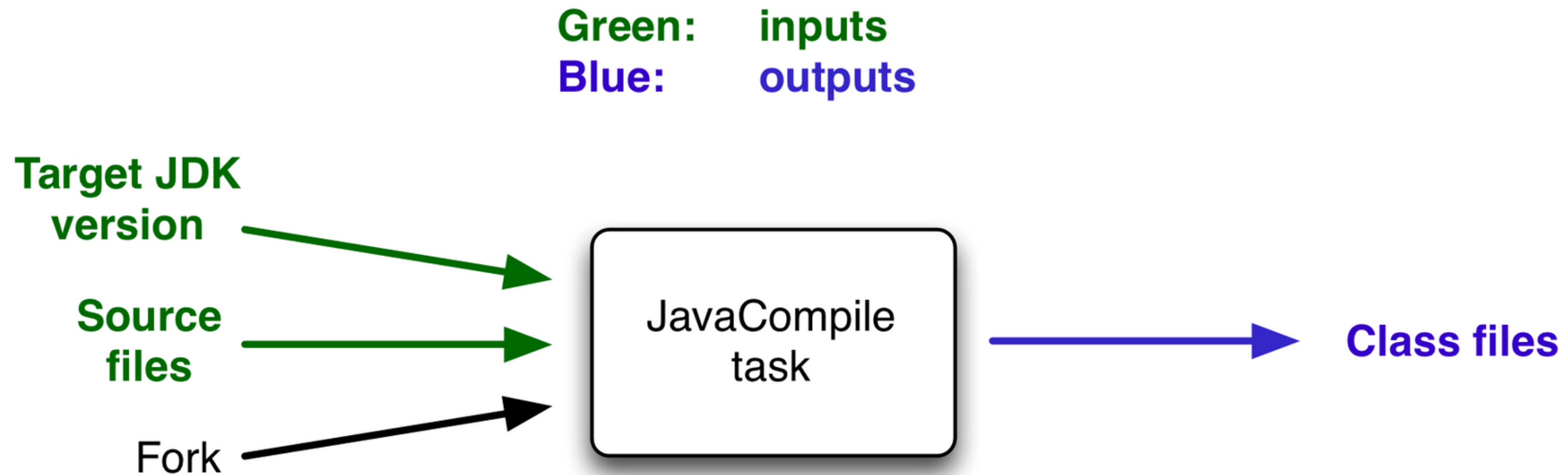




# Incremental builds

If neither a task's inputs nor its outputs have changed since the last time it was run, Gradle will not run it again

# Up-to-date checks (Incremental Build)





# Build Cache

- It aims to save time by reusing outputs produced by other builds.
- The build cache works by storing (locally or remotely) build outputs.





# Incremental builds

`--continue`

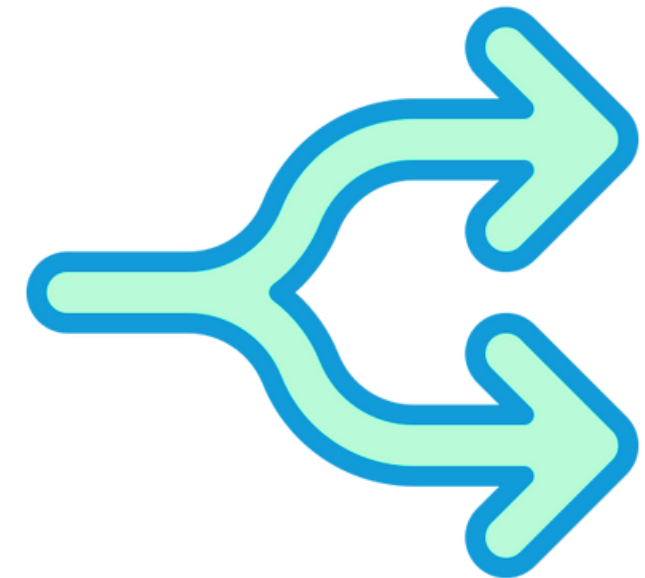
If neither a task's inputs nor its outputs have changed since the last time it was run, Gradle will not run it again.



# Parallel project execution

WITH MORE AND MORE CPU CORES AVAILABLE ON  
DEVELOPER DESKTOPS AND CI SERVERS

- Reduce total build time for a multi-project build
- Provide faster feedback for execution

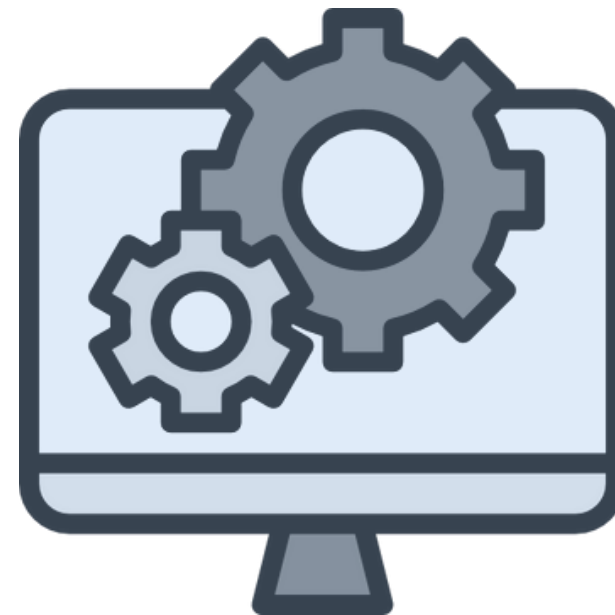


# Build Phases



## INITIALIZATION

determines which projects  
are going to take part in  
the build



## CONFIGURATION

project objects are  
configured



## EXECUTION

determines the subset of  
the tasks to be executed

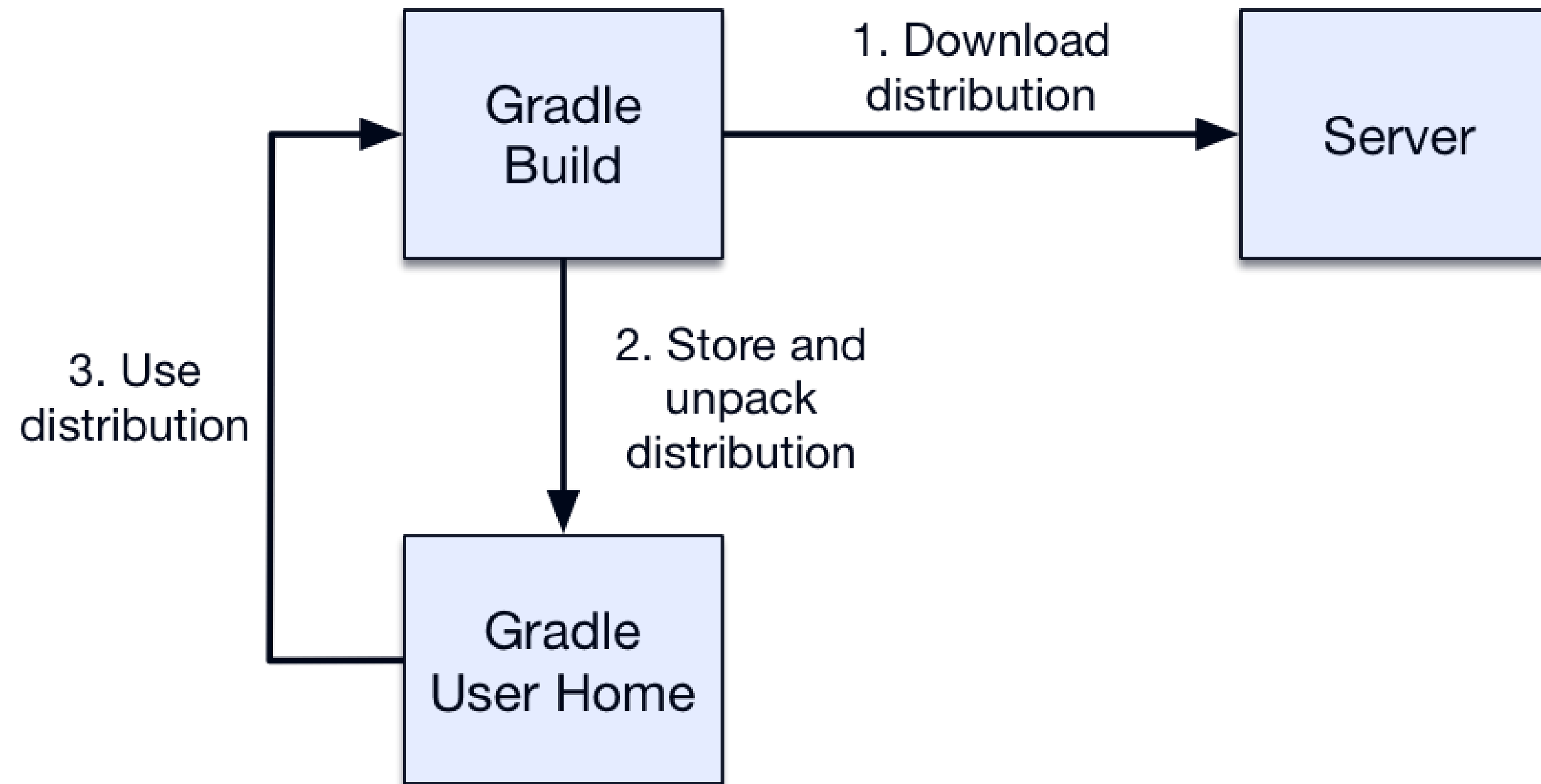


# Gradle is extensible

- Custom task types
- Custom task actions
- Extra properties on projects and tasks
- Custom conventions
- A custom model



# Gradle wrapper







# Gradle Deamon

A long-lived background process that executes your builds much more quickly

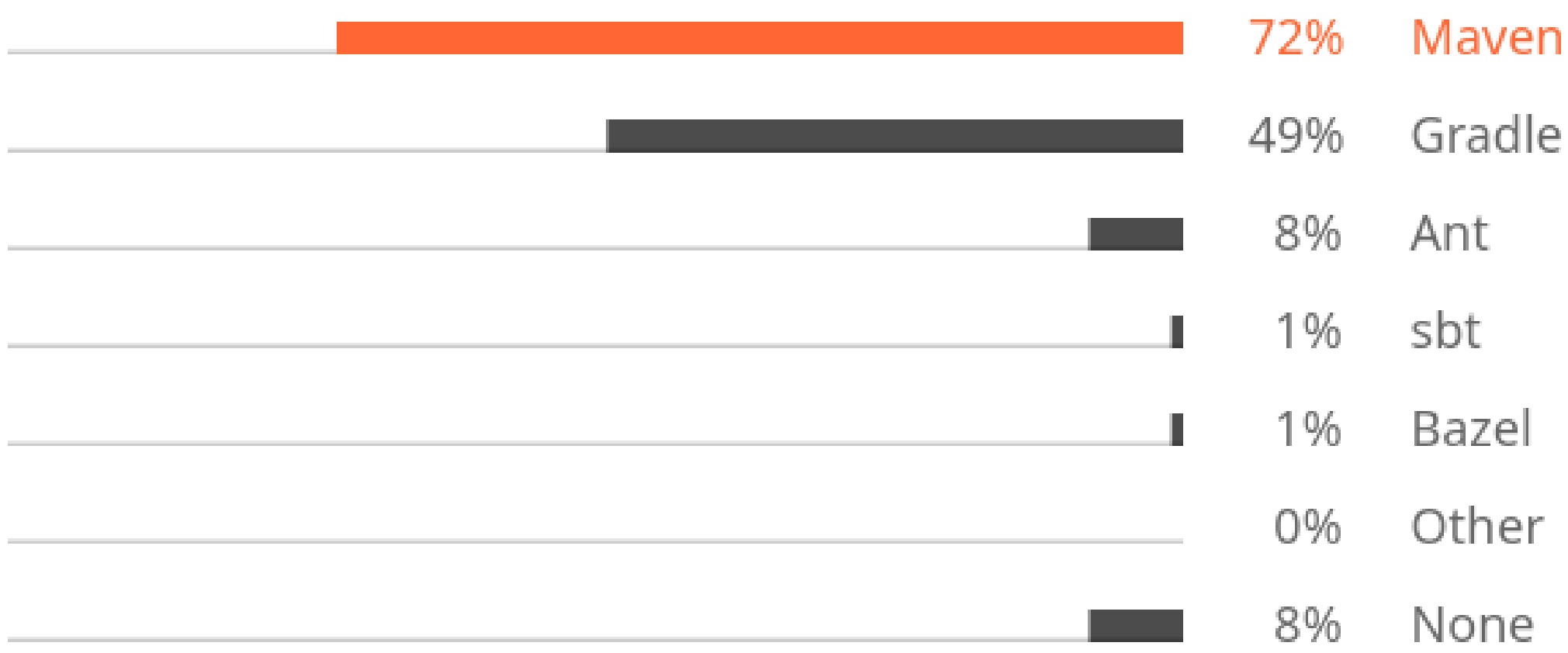


vs. *Maven*<sup>TM</sup>





# Build tool usage statistics



<https://www.jetbrains.com/idea/devecosystem-2021/java/>