# Gradle

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# Gradle introduction

- Gradle is flexible general purpose build tool
- It combines Ant with Dependency management and Maven conventions
- It provides Groovy based DSL interface for writing build scripts
  - easy to read and write Gradle scripts
- Conventions with great flexibility

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# Gradle supports

- Build automation, checking, testing, publishing
- Dependency management based on Apache Ivy
- Support of multi-project builds
- Incremental builds
- Pluggable architecture
- IDE support and integration

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# Gradle build scripts

- Projects and Tasks
- Project is made up of one or more Tasks
- Build scripts are code – you can use Groovy
- Task dependencies
- You can use Ant task in gradle script
- Tasks from plug-ins
- Default Tasks

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# Gradle build lifecycle

INIT     CFG     EXEC

# Gradle dependency management

- ## Declarative dependencies
  - grouped into configurations

```
dependencies {
  compile group: 'org.hibernate', name: 'hibernate-core', version: '3.6.7.Final'
  testCompile group: 'junit', name: 'junit', version: '4.+'
 }
```

- ## Repositories –Maven, Ivy, Local directory

```
repositories {
    jcenter()
}
```

- ## Publishing artifacts

# Gradle command line

- Built-in tasks
  - listing projects: `gradle projects`
  - listing tasks: `gradle tasks`
  - listing project dependencies: `gradle dependencies`
- Multiple tasks execution: `gradle compile test`
- Excluding tasks: `gradle dist -x test`
- You can use gradle GUI: `gradle -gui`

# Gradle wrapper

- Automatically downloads Gradle distribution
- You should check it into version control
- Use `gradlew` instead `gradle` command
- Available on Windows and Linux

# Gradle daemon

- Background process
- Speeds up the build
- Ideal when you build frequently
- Can be enabled via CLI, or for environment
  - `gradle –daemon`
  - `GRADLE_OPTS: -Dorg.gradle.daemon=true`
  - `org.gradle.daemon=true` in the `GRADLE_USER_HOME/gradle.properties`

# Gradle build environment

- `GRADLE_OPTS` **or** `JAVA_OPTS`
- properties in `gradle.properties` in following order
  - from `gradle.properties` located in project build dir
  - from `gradle.properties` located in gradle user home
  - from system properties, e.g. when `-Dsome.property` is used in the command line

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# Gradle more than Java

- Multilanguage (Polygot) builds
  - Java+Groovy+Scala…
- Official build system for Android studio
- Can be used to build C++ projects

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- DVD obsahuje výučbu Wordu, Excelu, PowerPointu, Outlooku a Accessu.
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