

Gradle Summit

Juggling multiple Java
platforms and Jigsaw
with Gradle - Cédric
Champeau

2016

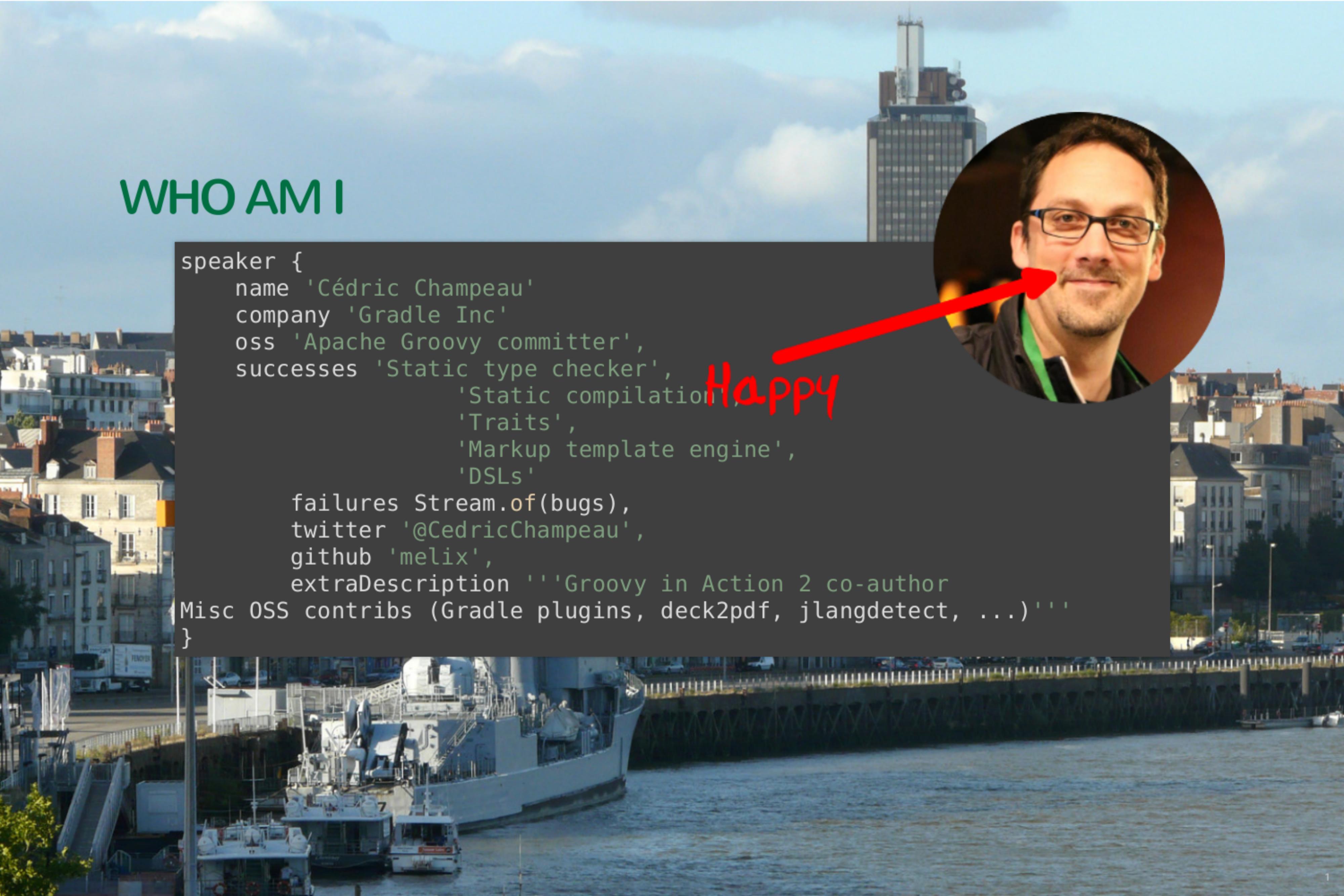


WHO AM I

```
speaker {  
    name 'Cédric Champeau'  
    company 'Gradle Inc'  
    oss 'Apache Groovy committer',  
    successes 'Static type checker',  
              'Static compilation',  
              'Traits',  
              'Markup template engine',  
              'DSLs'  
    failures Stream.of(bugs),  
    twitter '@CedricChampeau',  
    github 'melix',  
    extraDescription '''Groovy in Action 2 co-author  
Misc OSS contribs (Gradle plugins, deck2pdf, jlangdetect, ...)'''  
}
```



Happy



DISCLAIMER

- Work in progress
- Will be backported to current model



PROJECT JIGSAW

- Modularity for the Java platform
 - Reliable configuration (goodbye classpath)
 - Strong encapsulation (goodbye com.sun)
- Enforce strict boundaries between modules
 - compile-time
 - run-time

JIGSAW MODULES

DECLARING A MODULE

module-info.java

```
module com.foo.bar {  
    requires org.baz.qux;  
    exports com.foo.bar.alpha;  
    exports com.foo.bar.beta;  
}
```

A MODULE

- Declares dependencies onto other modules
 - optionally transitive (public)
- Declares a list of packages it exports
- will be found on modulepath

WHY IT'S GOING TO BREAK YOUR APPS

- Exports are package based
- A non-exported package is not visible to consumers
- 2 modules cannot export the same packages
- 2 modules cannot have the same internal packages

Death to split packages.

HOW GRADLE WILL HELP?

- Find a smooth migration path
- Prepare today, migrate when ready

GRADLE'S SOFTWARE MODEL

- Idea : we're building software, so let's model software
- Describe what rather than how
- Leverage conventions
- Work in progress

A SIMPLE PROJECT



INTERNAL APIs



INTERNAL APIS MAINTENANCE NIGHTMARE



DECLARING INTERNAL APIS



COMPILE AVOIDANCE



COMPILE AVOIDANCE BENEFITS

- Doesn't recompile dependents if:
 - method body changes
 - parameter names change
 - method order changes
 - private method added/removed
- In short: if API stable, do nothing

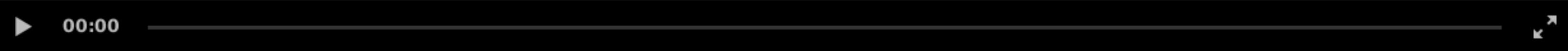
DECLARING TARGET PLATFORMS



WHY DOES GRADLE HELP?

- Add targetPlatform 'java9'
- Generate module descriptor automatically?
- Profit!

TRYING IT OUT



WHAT'S NEXT?

- Backport to "old" model
- Automatic toolchain selection
- Support for modulepath
- Support for jimage and jlink
- Support for modulepath
- Toolchain provisioning

BE INVOLVED

- Specs can be found on our GitHub repo



GRADLE INC

Motto: Build Happiness

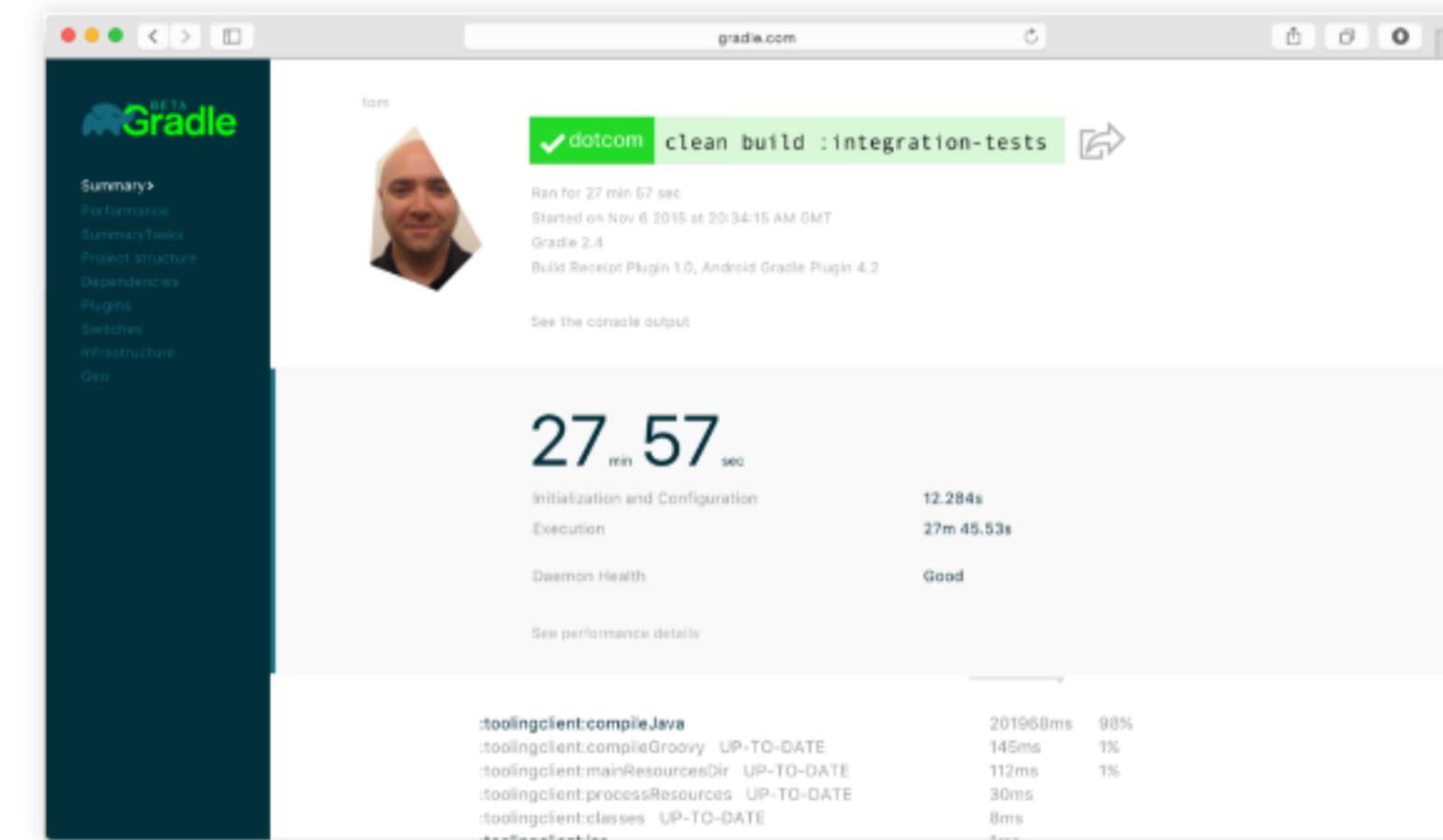
Mission: To revolutionize the way software is built and shipped. We exist to end once-and-for-all the worst things about big software and restore the reason you got into coding in the first place.

We're Hiring: Gradle is hiring front-end, back-end, and core software engineers. Visit gradle.org/jobs to apply.

INTRODUCING GRADLE CLOUD SERVICES

The first service, Gradle Build Scans, is now available.

- Insights into your build
- View and share via URL
- Debug, optimize and refine
- Analyze all of your builds



<https://receipts.gradle.com/r/ylmkI3dxypia>

Stop by the Gradle Lounge and create a Build Scan!

THANK YOU!

- Slides and code :
<https://github.com/melix/gradlesummit2016-jigsaw-gradle>
- Gradle documentation :
<http://gradle.org/documentation/>
- State of the module system:
<http://openjdk.java.net/projects/jigsaw/spec/sotms>
- Follow me: [@CedricChampeau](https://twitter.com/CedricChampeau)

Learn more at www.gradle.org