



# SonarQube [A key element to improve product quality](#)

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# SonarQube

- **Introduction**
- **Analysis Process**
- **AEM module Analysis**
- **Other Features**
- **Q&A**

**SONARQUBE [0]**

# SonarQube – Introduction

- **Continuous Code Quality Management / Continuous Inspection**
- **Centralize quality metrics of your source code**
- **Open source**
- **Used by Apache Projects (Maven, Sling, Jackrabbit, ...) [1]**
- **SonarSource company provides commercial Support and Plugins for SonarQube [2]**

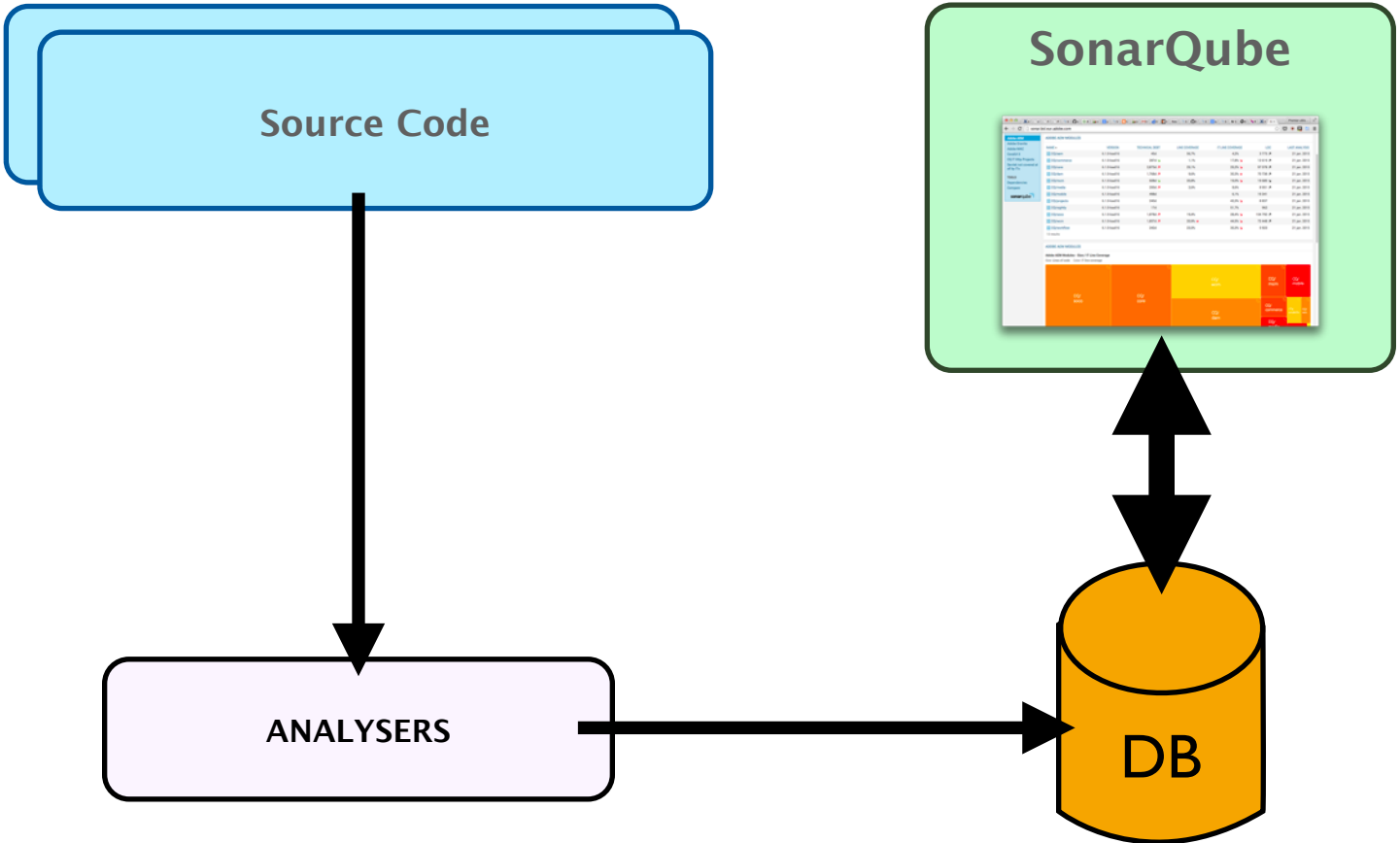
## QUICK WALKTHROUGH

# SonarQube – Introduction

- **Server Requirements**
  - Java
  - DB (Mysql, PostgreSQL, ...)
- **Server Installation is really simple** [\[3\]](#)
- **Update Center**

## **ANALYSIS PROCESS**

# SonarQube – Analysis Process





## **AEM MODULE ANALYSIS**

# AEM Module Analysis – Introduction

- Analysis Context
  - Java
  - Maven (+ repository)
- Sample project
  - [sneakybeaky/AEM-Integration-Test-Example @ Github](#) [4]
  - Jon Barber

# AEM Module Analysis

- 3 Levels of Analysis
  - Static Code Analysis
  - Unit Test Coverage
  - Integration Test Coverage

Unit Test

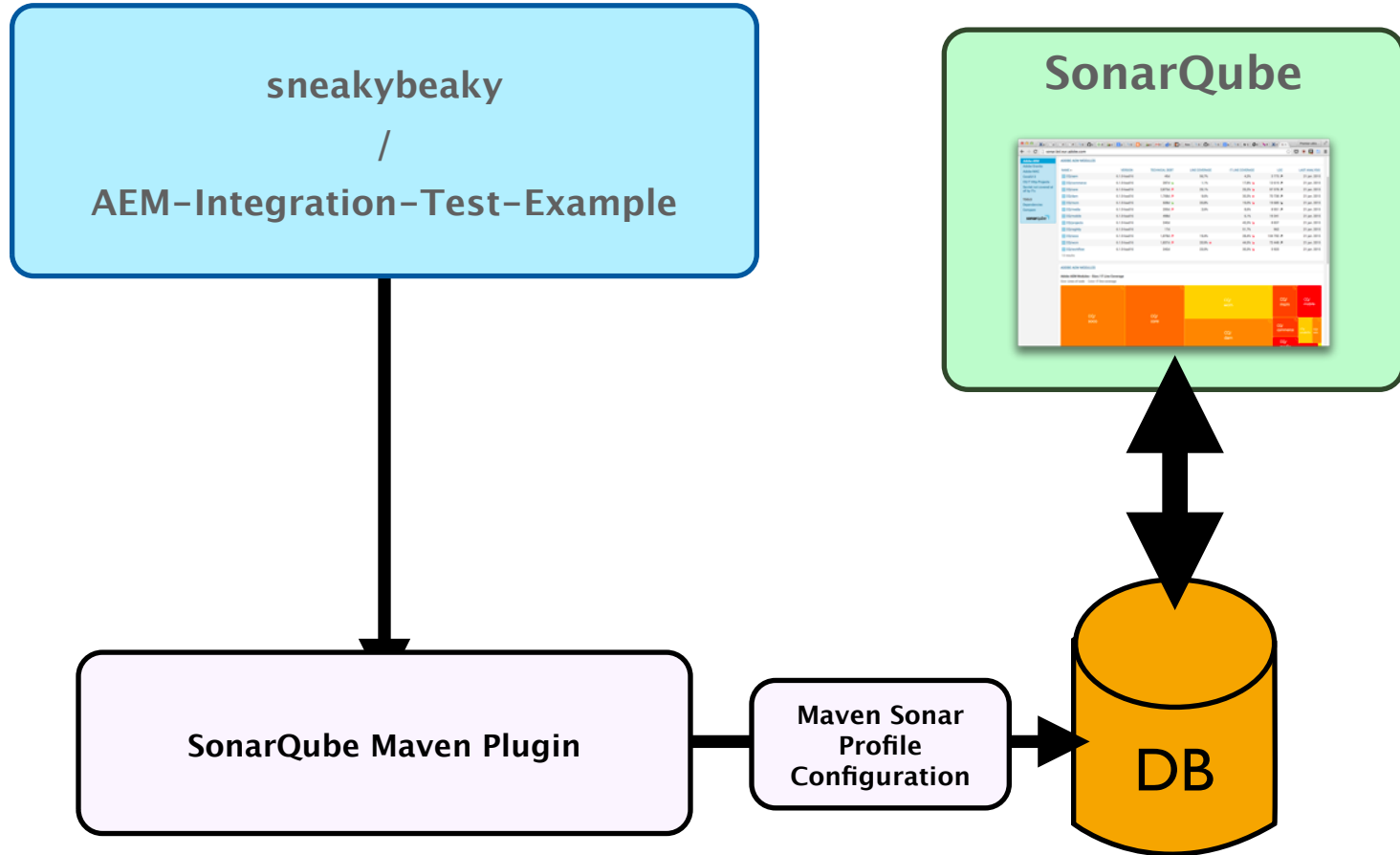
Run very quickly (no more than half a second or so), outside of any container

Integration Test

Any test that is run within an AEM instance

## **STATIC CODE ANALYSIS**

# Static Code Analysis – What We Need



**DEMO**

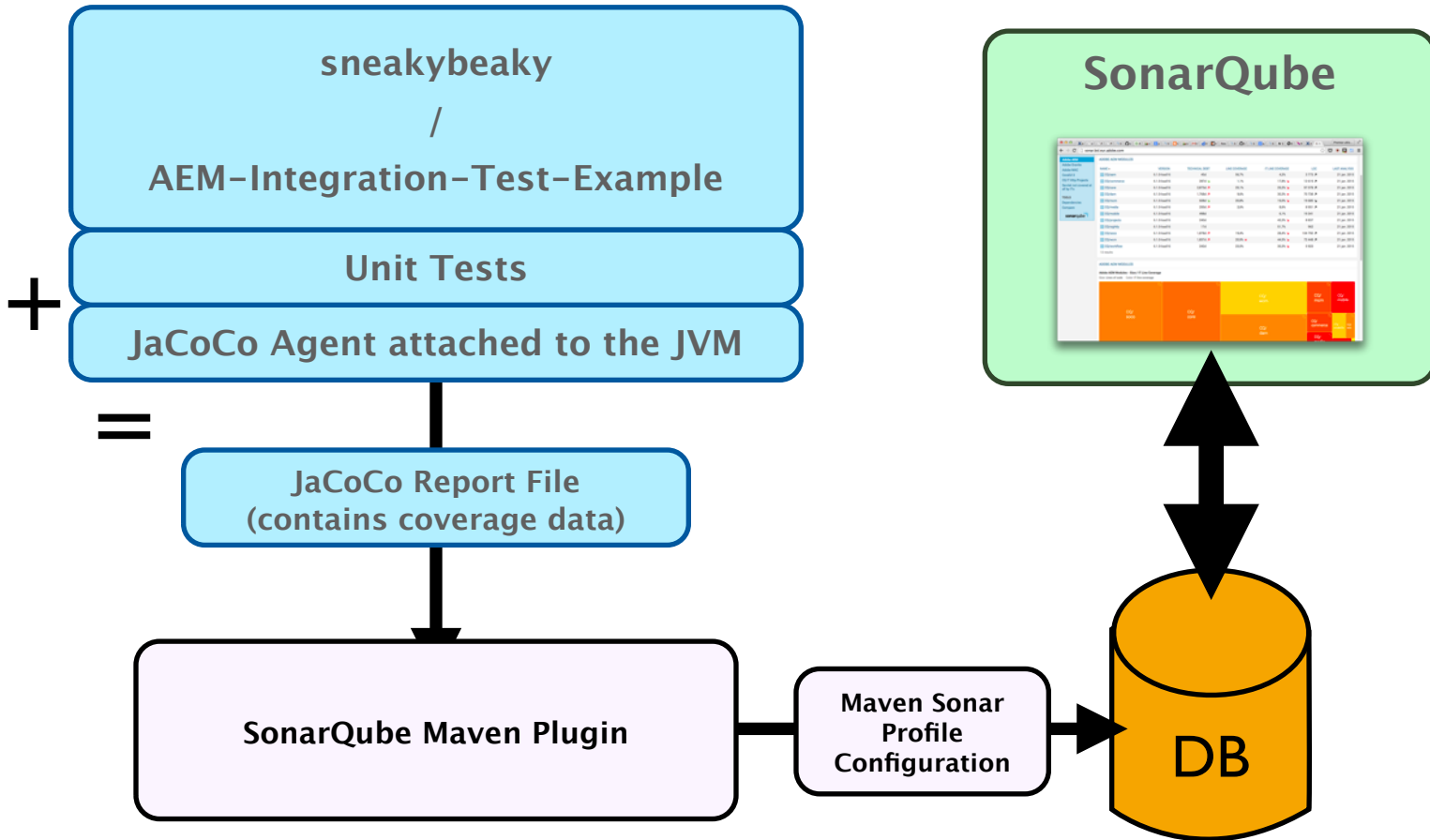
# Static Code Analysis

- **Analysis**
  - Configure SonarQube server in *Maven settings.xml* [\[5\]](#)
  - ... Nothing else is needed
- **UI**
  - Contextual Navigation
  - Customizable (dashboards, widgets)
  - Quality Profiles - Powerful Rule System (with multiple Rules repositories [\[6\]](#))
  - Embedded ticketing system for Issues (REMARK: you can also integrate with JIRA)
- **Misc.**
  - Modifying parameters won't change existing analysis!

## **UNIT TEST COVERAGE**



# Unit Test Coverage – What We Need



**DEMO**

# Unit Test Coverage

- SonarQube Analysis
  - Execute Unit Tests (automatic during maven build)
  - JaCoCo agent [\[7\]](#) attached to the JVM during build

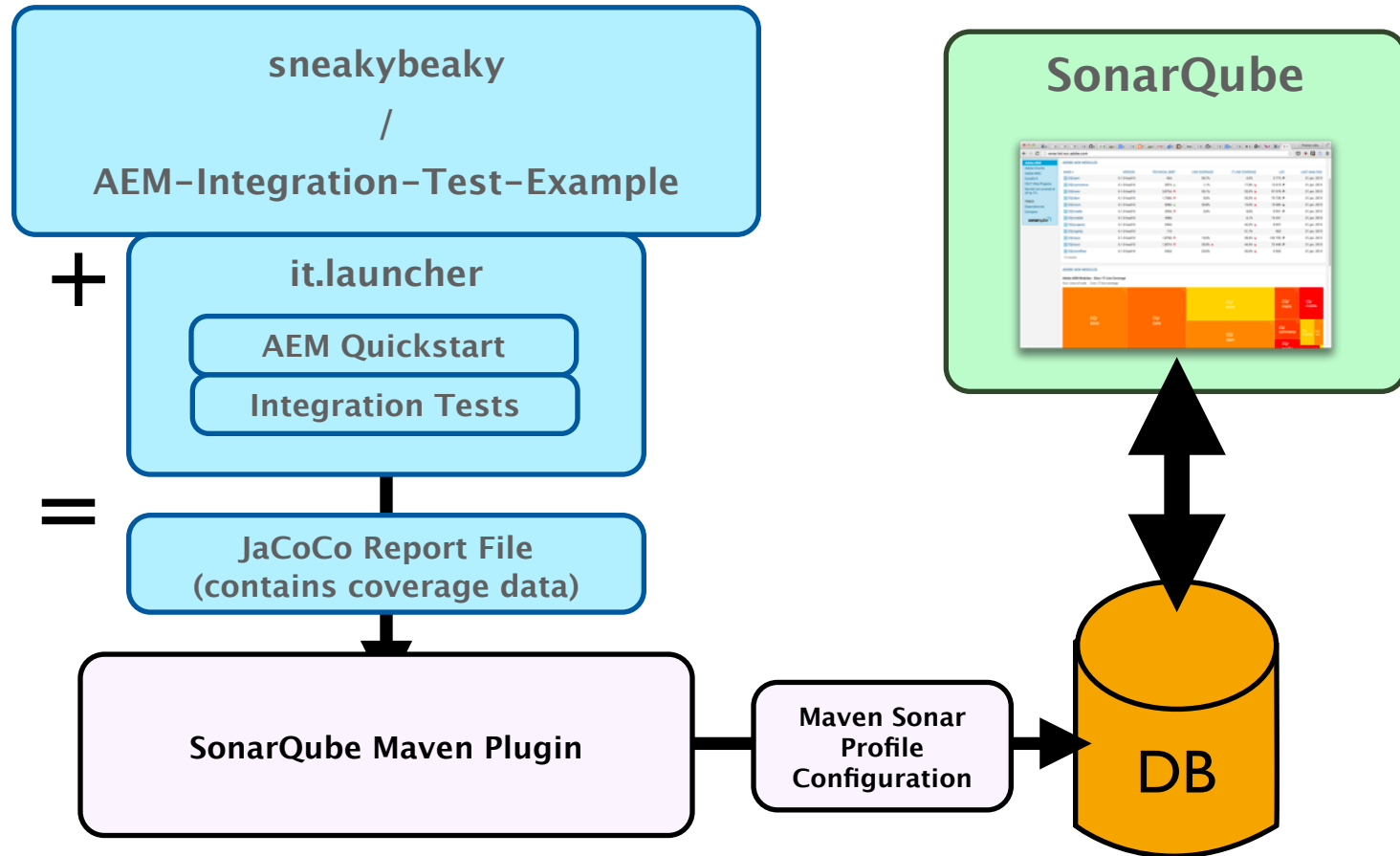
```
mvn -Dmaven.test.failure.ignore=true  
org.jacoco:jacoco-maven-plugin:prepare-agent  
clean install
```

## **INTEGRATION TEST COVERAGE**

# Integration Test Coverage

- In-Container Testing
- HTTP Based Integration Testing [\[8\]](#)

# Integration Test Coverage – What We Need



# Integration Test Coverage

**DEMO**

# Integration Test Coverage

- **SonarQube Analysis**
  - **Execute Tests directly on AEM**
  - **Sling Testing Tools [8] to automate:**
    - **AEM startup**
    - **+ JaCoCo agent attachment**
    - **+ Additional packages installation (tests)**
    - **+ Tests Execution**



## **OTHER FEATURES**

# Other Features

- **Alternative Analysers**
  - Sonar-Runner Standalone application
  - SonarQube ant task
  - Gradle
  - Grunt
- C / C++ / Javascript code analysis
- JIRA Integration
- LDAP Authentication
- Web Service API
- Commercial plugins [\[2\]](#)
  - Portfolio Management - Views (1800USD/year)
  - Technical Debt Evaluation - SQALE (2700USD/year)

## RESOURCES

# SonarQube – Resources

- [0] SonarQube <http://www.sonarqube.org/>
- [1] Apache Projects [http://nemo.sonarqube.org/all\\_projects](http://nemo.sonarqube.org/all_projects)
- [2] Commercial Solutions <http://www.sonarsource.com/>
- [3] SonarQube Installation <http://docs.sonarqube.org/display/SONAR/Installing>
- [4] Sample Project <https://github.com/sneakybeaky/AEM-Integration-Test-Example>
- [5] Configuring Maven <http://docs.sonarqube.org/display/SONAR/Installing+and+Configuring+Maven>
- [6] Java Rules Repositories
  - Checkstyle <http://checkstyle.sourceforge.net/>
  - PMD <http://pmd.sourceforge.net/>
  - Findbugs <http://findbugs.sourceforge.net/>
- [7] JaCoCo Agent <http://www.eclemma.org/jacoco/trunk/index.html>
- [8] Sling Testing Tools <http://sling.apache.org/documentation/development/sling-testing-tools.html>

## Q & A

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