

# HLD

## pre-commit

Prettier	Ts Lint
Used to ensure that all code follows a uniform style, making it easier to read and maintain.	Used to detect syntax errors, coding convention violations, and Typescript-specific code quality issues.

### Choice :

Prettier is excellent for code formatting, while Ts Lint is essential for checking code quality and detecting Typescript-specific errors.

## Commit

Commitizen
wish to standardize and improve the quality of their commit messages, thus facilitating maintenance, traceability and automation in their projects.

## Analyse Statique

SonarQube	Fortify
focuses on overall code quality with a secondary focus on security. offers detailed metrics on code quality, which is useful for improving coding practices and maintainability.	mainly focuses on application security. provides in-depth security scans and helps identify vulnerabilities before they become security risks.

Choice :

SonarQube is often preferred for projects where the quality of the code is paramount. Fortify is preferred for projects where safety is critical, especially in regulated environments.

## Tests Unitaires

JUnit:	PHPUnit:
Designed specifically for Java.	PHPUnit is a testing framework designed specifically for PHP applications to facilitate unit testing.

Choice :

The choice between JUnit and PHPUnit strongly depends on the programming language and the type of project

## Test dependence

Snyk	Dependency-Check :
Type of tool: Security tool for dependency management. Vulnerability detection , Continuous monitoring and Provides detailed reports and alerts on the vulnerabilities found.	Type of tool: Security tool for dependency management. Vulnerability detection, Generates detailed reports on vulnerabilities found in dependencies and Ease of use.

Choice:

Snyk is often preferred due to its extensive functionality and multi-language support, while Dependency-Check remains a solid and effective tool for projects mainly focused on Java.

## E2E Tests

Selenium	Cypress
<p>Selenium is designed to automate interactions with web browsers by allowing web applications to be tested in different browsers (Chrome, Firefox, Safari, etc.).</p> <p>Selenium works by using browser APIs to simulate user actions .</p> <p>Supports a wide range of browsers (Chrome, Firefox, Safari, Internet Explorer, Edge, etc.)</p>	<p>is specifically designed for modern web application testing and used to test web applications in the Chromium browser (and, to some extent, Firefox).</p> <p>Cypress works directly in the browser</p>

### Choice:

Cypress is often chosen for projects requiring quick configuration and testing in modern browsers, while Selenium is preferred for its flexibility and extensive browser support.

## Tests Dynamique

OWASP ZAP (Zed Attack Proxy)	Acunetix
<p>is an open-source web application security testing tool, developed by the OWASP community.</p>	<p>is a commercial web application security testing tool developed by a private company.</p> <p>aims to automate security</p>

enable developers and security testers to discover security vulnerabilities in web applications. Cost: Free (open-source).	testing of web applications and detect a wide range of vulnerabilities Cost: Commercial, with a paid license.
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#### Choice:

OWASP ZAP is ideal for those looking for an open-source and flexible solution, while Acunetix is more suitable for organizations looking for a complete commercial solution with professional support.

## Build et Packaging

Maven	Gradle
Java-based project and construction management tool, developed by Apache. Simplify the management of dependencies and life cycles of Java projects by using XML configuration files (pom.xml).	Modern and flexible construction tool for software projects, developed by Gradle Inc. To provide a fast and efficient project construction using a DSL (domain-specific language) based on Groovy or Kotlin for the configuration files (build.gradle).

#### Choice:

Maven is often preferred for its simplicity, its clear structure and its wide ecosystem of plugins, especially for Java projects. Gradle is preferred for its flexibility, performance, and customization capabilities, which makes it ideal for complex projects

## Publier dans repository

JFrog Artifactory:	Nexus Repository:
Provides robust security features including access control, permission management, and integration with JFrog Xray for deep security scanning and license compliance.	Includes strong security features with Sonatype Lifecycle, which offers vulnerability identification and remediation.

### Choice:

The choice between JFrog Artifactory and Nexus Repository often depends on specific use cases and organizational needs.

Nexus Repository remains a strong contender, especially for organizations already invested in the Sonatype ecosystem or those looking for a cost-effective solution with solid core features.

## Scan Docker image

Trivy:	Clair
Security scanning tool for containers and other artifacts. Check for vulnerabilities in container images, system files, Git repositories, and more.	Static analysis tool for the detection of vulnerabilities in containers. Analyze container images to detect vulnerabilities using a centralized database.

### Choice:

Trivy is generally preferred for its simplicity and efficiency in security scans, while Clair is chosen for its in-depth analysis capabilities and its API integration in more complex environments.

## Monitoring et Logging

Prometheus	Grafana	ELK Stack
is specifically designed for the monitoring of cloud-native systems and microservices.	is ideal for visualizing the data collected by Prometheus, thus creating a powerful combination for monitoring and alerting.	ELK Stack allows you to centralize logs from different sources, transform them with Logstash, store and search them with Elasticsearch, and visualize them with Kibana

### Choice:

For a complete log monitoring and management solution, ELK Stack is the preferred choice due to its centralization, search, and log visualization capabilities.