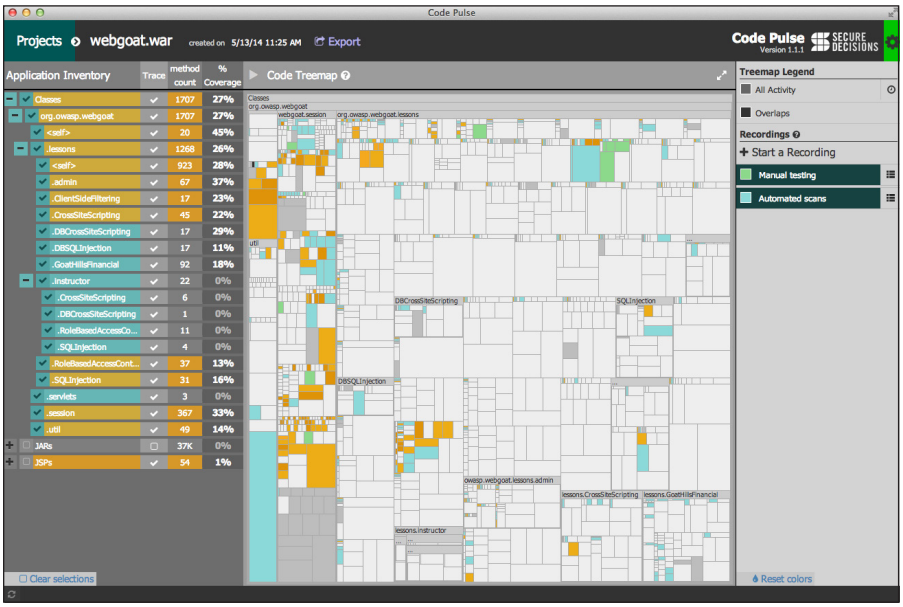
Code Pulse

FACT SHEET

Watch as your penetration testing exercises all of the code in your application – *free and open source*



Your software penetration testing is only effective if it covers all of the different code paths that an attacker can use to get in. You can't feel secure until you've covered the entire **attack surface**, and for that you need to track the **code coverage** of your testing: the parts of your code that you have actually tested.

Code Pulse is a breakthrough in support for real time code coverage analysis. It lets you see, in a clear and unambiguous way, how well your testing is getting into all the corners of your application code.

Code Pulse passively monitors as you conduct manual or automated application testing, and keeps track (in real time) of the code executed by those tests. It gives you a visual picture of that code coverage, showing what you may have missed, how different tests may overlap, and how well your dynamic application security testing (DAST) and penetration testing tools exercise your code.

Developers, Software Penetration Testers, Security Auditors, and Quality Assurance engineers can all benefit from this comprehensive code coverage analysis. Real-time feedback makes it easy to adjust testing activity based on the observed code coverage. For testing that relies on multiple techniques or tools, it's easy to see which code was covered by each tool independently, or to view coverage overlaps between multiple tools. In all ways, Code Pulse can make your software penetration testing more effective, and more efficient.

KEY BENEFITS

Find Gaps in Your Code Testing
Code Pulse gives you visual understanding of how well your tests cover the code, and where the gaps are. Even if the tester visited a page, certain critical code paths may not have been triggered. Code Pulse shows exactly what methods were called during testing, letting you understand precisely where the code coverage gaps are.

Compare Coverage Across Testing Tools
Code Pulse monitors and compares the coverage of automated application penetration testing tools, giving you a visual picture of code coverage overlaps and gaps.

Communicate Effectively
Coverage activity can be exported and shared with others, helping you use your testing tools more effectively.

Tune Automated Tools
You can monitor automated tool coverage in real time with Code Pulse, which lets you rapidly fine-tune the configuration of your testing tools to achieve the most effective test coverage.

CODE PULSE USERS

Development, testing, and QA teams can quickly identify important gaps in code test coverage.

Auditors and compliance officers can more efficiently, and effectively, conform to compliance standards by verifying required code coverage.

Code Pulse is an OWASP project joining the rich ranks of the OWASP project inventory. https://www.owasp.org/index.php/OWASP_Code_Pulse_Project

OWASP
Open Web Application Security Project

KEY FEATURES

- **Real-time insight** See what code is called, in real-time, as a result of your testing activities.
- **Detailed coverage information** See coverage from a high-level overview down to individual methods.
- **Application Inventory** Understand the structure and dependencies of the application that you're testing, right from the Code Pulse interface.
- **Visualizations** See code coverage in a single at-a-glance visual interface.
- **Separate recordings** Keep track of which testing activity executed which parts of the code.
- **Multi-session traces** Record and maintain coverage data over the course of multiple testing sessions.
- **Share/Export** Easily export and share your code coverage with others.
- **Work with any testing tool** Track coverage information regardless of which testing tool you use.
- **Third-party vulnerability identification** Integrate directly with OWASP Dependency Check to automatically get notifications when a third party dependency has a known vulnerability.

About Code Pulse

For those just starting up a software assurance program, Code Pulse used in conjunction with Code Dx provides the tools to assess their code bases with greater confidence, leveraging SAST, DAST, and enhanced penetration testing capability. This is an economical introduction to software and quality assurance initiatives for development teams. For those with a more mature SQA program, Code Pulse is a free addition to their existing software testing infrastructure.

Code Pulse was developed under a DHS BAA contract #FA8750-12-C-0219. It is available as an open source application security at: **https://github.com/secdec/codepulse.**

The Value of Code Pulse

Code Pulse has been developed as a stand-alone software and quality assurance tool that enhances penetration testing activities of your web application code. Its strengths are found in these discriminating features:

Real-time analysis of penetration testing results
Activity is recorded and presented as the application is being exercised. This is a unique feature, as other penetration testing tools typically evaluate and present results at the conclusion of a testing run, rather than while the tester is immersed in the testing activity.

Meaningful visualization of test results
It provides dashboard summaries and metrics, and meaningful visualization of code coverage achieved during penetration testing. This is particularly valuable as visualization is remarkably absent from the host of tools offered, not only within the penetration testing arena, but also among code coverage analysis tools and profilers in general.

Reduced analysis & triage time
Results are organized into comprehensive and understandable language and graphics. Management of results is streamlined, saving time on code coverage analysis.

Expedited time to achieve software compliance
With Code Pulse identifying software testing coverage gaps in real time, you will achieve more effective remediation of your code earlier in the development process. This activity provides a documented trail of remediation efforts that helps streamline the review process of candidate software for compliance evaluations, saving time and cost.

Code Pulse

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