**<https://www.softwaretestinghelp.com/tools/top-40-static-code-analysis-tools/>**

**Here is the list of the top 10 Static Code Analysis Tools for Java, C++, C# and Python:**

1. Raxis
2. RIPS Technologies
3. PVS-Studio
4. Kiuwan
5. reshift
6. Embold
7. SmartBear Collaborator
8. CodeScene Behavioral Code Analysis
9. Visual Expert
10. Veracode
11. Fortify Static Code Analyzer
12. Parasoft
13. Coverity
14. CAST
15. CodeSonar
16. Understand
17. Code Compare

**Here is a detailed review of each.**

### #1) Raxis

[Raxis-Logo1](https://www.softwaretestinghelp.com/wp-content/qa/uploads/2019/05/Raxis-Logo1.png)

Raxis does one better than automated tools that often discover false findings that waste time and effort.

Raxis scopes an amount of time that works best for your company’s code and assigns a security-focused former developer to analyze your code for both general security and business-logic vulnerabilities.

Raxis communicates throughout to be sure your input is used within the code review, and they provide a report that details each finding with screenshots and remediation advice. A high-level summary that can be provided to management and a debriefing call are also included.

**=>**[**Visit Raxis Information Security Website**](https://raxis.com/code-review)

### #2) RIPS Technologies



RIPS is the only code analysis solution that performs language-specific security analysis. It detects the most complex security vulnerabilities deeply nested within the source code that no other tools are able to find.

It supports major frameworks, SDLC integration, relevant industry standards, and can be deployed as a self-hosted software or used as software-as-a-service. With its high accuracy and no false-positive noise, RIPS is the ideal choice for analyzing Java and PHP applications.

**=>**[**Visit RIPS Technologies Website**](https://www.ripstech.com/product/)

### #3) PVS-Studio



PVS-Studio is a tool for detecting bugs and security weaknesses in the source code of programs, written in C, C++, C#, and Java. It works in Windows, Linux, and macOS environment.

It is possible to integrate it into Visual Studio, IntelliJ IDEA, and other widespread IDE. The results of the analysis can be imported into SonarQube.

Enter the **#top40 promo code** in the message field on the download page to get the PVS-Studio license for a month instead of 7 days.

**=>**[**Visit PVS-Studio Website**](https://www.viva64.com/en/pvs-studio-download/?promo=top40)

### #4) Kiuwan

kiuwan-logo

Kiuwan is a SAST and SCA platform with the largest technology coverage and integrations in the market.

With a DevSecOps approach, Kiuwan achieves outstanding benchmark scores (Owasp, NIST, CWE, etc) and offers a wealth of features that go beyond static analysis, catering to every stakeholder in the SDLC.

**=>**[**Visit Kiuwan Code Security Website**](https://www.softwaretestinghelp.com/Kiuwan-static-code-analysis)

### #5) reshift



Reshift is a SaaS-based software platform that helps software development teams identify more vulnerabilities faster in their own code before deploying to production.

Reducing the cost and time of finding and fixing vulnerabilities, identifying the potential risk of data breaches, and helping software companies achieve compliance and regulatory requirements.

**=>**[**Visit Reshift Website**](https://gnldr.website/tracker/click?redirect=https%3A%2F%2Freshiftsecurity.com%2F%3Futm_source%3Dsoftwaretestinghelp%26utm_medium%3Dcpc%26utm_campaign%3Dsoftware_testing_help_listing&dID=1571414475680&linkName=https://reshiftsecurity.com/?utm_source=softwaretestinghelp&utm_medium=cpc&utm_campaign=software_testing_help_listing)

### #6) Embold

[Embold Logo](https://www.softwaretestinghelp.com/wp-content/qa/uploads/2020/07/Embold-Logo.png)

Embold is an intelligent software analytics platform that supports developers and teams in building higher quality software in less time, by speeding up code reviews.

It automatically prioritizes hotspots in the code and provides clear visualizations. With its multi-vector diagnostic technology, it analyses software from multiple lenses, including software design, and enables users to manage and improve their software quality transparently.

You can run Embold on the cloud, or for IntelliJ IDEA users, download a free plugin directly in your IDE.

**=>**[**Visit Embold Website**](https://embold.io/)

### #7) SmartBear Collaborator

[SmartBear Collaborator](https://www.softwaretestinghelp.com/wp-content/qa/uploads/2021/02/SmartBear-Collaborator.png)

SmartBear Collaborator is a code review tool that is suitable for remote as well as co-located teams. It has comprehensive review capabilities to review various documents like design, requirements, documentation, user stories, test plans, and source code.

It can be integrated with GitHub, GitLab, Bitbucket, Jira, Eclipse, Visual Studio, etc. For the proof of review, it offers the features of electronic signatures. It provides detailed reports. The tool can be used by businesses of any size.

SmartBear contains many more features like tracking & managing defects, customizing review templates, collaborating on software artifacts & documents, etc. It can be tried for free and the price starts at $554 per year for a 5 user pack.

**=>**[**Visit SmartBear Collaborator Website**](https://smartbear.com/product/collaborator/overview/?utm_source=sth&utm_medium=display&utm_campaign=sth_test)

### #8) CodeScene Behavioral Code Analysis

[](https://www.softwaretestinghelp.com/wp-content/qa/uploads/2019/07/CodeScene-logo.png)

CodeScene prioritizes technical debt and code quality issues based on how the organization actually works with the code. Hence, CodeScene limits the results to information that is relevant, actionable and translates directly into business value.

CodeScene also goes beyond traditional tools by measuring the organization and people’s side of your system to detect coordination bottlenecks in the software architecture, off-boarding risks, and knowledge gaps.

Finally, CodeScene integrates into your CI/CD pipeline to act as an extra team member that predicts delivery risks and offers context-aware quality gates to supervise the health of your code.

**=>**[**Visit CodeScene Website**](https://codescene.com/)

### #9) Visual Expert

[Visual Expert logo](https://www.softwaretestinghelp.com/wp-content/qa/uploads/2020/01/Visual-Expert-logo.png)

Visual Expert is a unique static code analysis tool for SQL Server, Oracle, and PowerBuilder code.

**Visual Expert toolbox offers 200+ features to reduce maintenance and avoid regressions when making modifications as mentioned below:**

* Code Review
* CRUD Matrix
* E/R Diagrams synchronized with code view.
* Code Performance Analysis
* Code exploration
* Impact analysis
* Source Code Documentation
* Code Comparison

**=>**[**Click here to analyze your Code with Visual Expert**](https://www.visual-expert.com/EN/lp-ve-download-source_adv914ve.html?single)

### #10) Veracode

[Veracode Static Code Analysis Tool](https://www.softwaretestinghelp.com/wp-content/qa/uploads/2016/04/Static-Code-Analysis-Tools-1.jpg)

Veracode is a static analysis tool that is built on the SaaS model. This tool is mainly used to analyze the code from a security point of view.

This tool uses binary code/bytecode and hence ensures 100% test coverage. This tool proves to be a good choice if you want to write secure code.

**Website Link:**[**Veracode**](https://www.veracode.com/products/static-analysis-sast/static-analysis-tool)

### #11) Fortify Static Code Analyzer

Fortify, a tool from HP which lets a developer build an error-free and secure code. This tool can be used by both development and security teams by working together to find and fix security-related issues. While scanning the code, it ranks the issues found and ensures the most critical ones are fixed first.

**Website Link:**[**Micro Focus Fortify Static Code Analyzer**](https://www.microfocus.com/en-us/products/static-code-analysis-sast/overview)

### #12) Parasoft

Parasoft, no doubt one of the best tools for Static Analysis Testing. This is slightly different when compared to other static analysis tools because of its ability to support various types of static analysis techniques like Pattern Based, Flow-Based, Third Party Analysis, and Metrics and Multivariate analysis.

Another good thing about the tool is beside identifying defects it allows provides a feature that prevents defects.

**Website Link: [Parasoft](https://www.parasoft.com/capability/static-analysis/" \t "_blank)**

### #13) Coverity

[Coverity Static Code Analysis Tool](https://www.softwaretestinghelp.com/wp-content/qa/uploads/2016/04/Static-Code-Analysis-Tools-3.jpg)

Coverity Scan is an open-source cloud-based tool. It works for projects written using C, C++, Java C# or JavaScript. This tool provides a very detailed and clear description of the issues which help in faster resolution. A good choice if you are looking for an open-source tool.

**Website Link: [Coverity](https://scan.coverity.com/" \t "_blank)**

### #14) CAST

An automated tool that can be used to analyze more than 50+ languages works excellently regardless of the size of the project. In addition, it provides a Dashboard to users which helps in measuring quality and productivity.

**Website Link:**[**CAST**](http://www.castsoftware.com/glossary/static-analysis-tool)

### #15) CodeSonar

[CodeSonar Static Code Analysis Tool](https://www.softwaretestinghelp.com/wp-content/qa/uploads/2016/04/Static-Code-Analysis-Tools-9.jpg)

A Static analysis tool by Grammatech not only lets a user find a programming error, but it also helps in finding out domain-related coding errors. It also allows customizing checkpoints and also built-in checks can be configured as per the requirement.

Overall a great tool to detect security vulnerabilities and its ability to do a deep static analysis makes this stand out from the rest of the other static analysis tools available in the market.

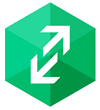
**Website Link: [CodeSonar](http://www.grammatech.com/products/source-code-analysis" \t "_blank)**

### ****#16) Understand****

Just like its name, this tool lets user UNDERSTAND code by analyzing, measuring, visualizing and maintaining. This allows quick analysis of massive codes. This is one tool that is mainly used by the aerospace and automakers industry. Supports major languages like C/C++, ADA, COBOL, FORTRAN, PASCAL, Python and other web languages.

**Website Link:**[**Understand**](https://scitools.com/)

### #17) Code Compare



Code Compare – is a file and folder comparison and merge tool. Over 70,000 users actively use Code Compare while resolving merge conflicts and deploying source code changes.

Code Compare is a free compare tool designed to compare and merge differing files and folders. Code Compare integrates with all popular source control systems: TFS, SVN, Git, Mercurial, and Perforce. Code Compare is shipped both as a standalone file diff tool and a Visual Studio extension.

**Key features:**

* Text Comparison and Merging
* Semantic Source Code Comparison
* Folder Comparison
* Visual Studio Integration
* Version Control Integration and more

**#18) Clang Static Analyzer**

This is an open-source tool that can be used to analyze a C, C++ code. It uses the clang library, hence forming a reusable component and can be used by multiple clients.

**Website Link:**[**Clang Static Analyzer**](https://clang-analyzer.llvm.org/)

**#19) CppDepend**

A very easy to use the tool when compared to other static analysis tools. As the name suggests, this tool is used to analyze C/C++ codes. Supports different code quality metrics, provides the facility to monitor trends, has an add-in to integrate with Visual Studio, allows writing custom queries and comes with a very good diagnostic facility.

**Website Link: [CppDepend](http://www.cppdepend.com/" \t "_blank)**

**#20) Klocwork**

Apart from finding semantics and syntax error, this tool also lets users detect vulnerabilities in the code. This tool is well integrated with many common IDE’s like Eclipse, Visual Studio, and Intellij IDEA. This can run in parallel to code creation, it does a line by line check and provides a feature for addressing the defects immediately.

**Website Link: [Klocwork](http://www.klocwork.com/capabilities/static-code-analysis" \t "_blank)**

**#21) Cppcheck**

Another free static analysis tool for C/C++. The good thing about this tool is its integration with several other development tools like Eclipse, Jenkins, CLion, Visual Studio and many more. Its installer can be found at sourceforge.net.

**Website Link: [Cppcheck](http://cppcheck.sourceforge.net/" \t "_blank)**

**#22) Helix QAC**

Helix QAC is an excellent static analysis testing tool for C and C++ code from Perforce (formerly PRQA). The tool comes with a single installer and supports platforms like Windows 7, Linex Rhel 5 and Solaris 10. This gives very clear diagnostics which helps in identifying the root cause and quick defect fixes.

**Website Link:**[**Helix QAC**](https://www.perforce.com/products/helix-qac)

**#23) Goanna**

[](https://www.softwaretestinghelp.com/wp-content/qa/uploads/2016/04/Static-Code-Analysis-Tools-15.jpg)

A security static analysis tool for C/C++ and allows integration with Microsoft Visual Studio, Eclipse, Texas Instruments Code Composer and many more IDE’s.This can be run like a compiler and hence allows analyzing file-level details in addition to whole projects. Also, has excellent error reporting feature.

**Website Link:**[**Goanna**](http://redlizards.com/)

**#24) Polyspace**

Polyspace bug-finder helps in finding defects for C/C++; this is integrated with Eclipse and also is compliant with coding rule standards like MISRA C, MISRA C++, and JSF++.

**Website Link: [Polyspace](http://in.mathworks.com/products/polyspace-bug-finder/" \t "_blank)**

**#25) Sourcemeter**

A tool that helps in analyzing C/C++, Java, C#, RPG and Python codes. Another good thing about this tool is it allows integration with free static checker tools like cppcheck, PMD, FindBugs. Basic Version of this tool is free but it comes with fewer features. Based on the need, you can decide whether the free version satisfies the requirement or not.

**Website Link: [Sourcemeter](https://www.sourcemeter.com/" \t "_blank)**

**#26) ConQAT**

An excellent tool that can be used for clone detection supports multiple languages, allows integration with other static analysis tools, provides a dashboard that shows the details on the issues found and other quality metrics.

**Website Link: [ConQAT](https://www.cqse.eu/en/products/conqat/overview/" \t "_blank)**

**#27) JArchitect**

An excellent tool that makes analyzing Java code simple and easier supports for Code Query over LINQ, provides a number of code metrics, allows code comparison between builds and comes with a very good customizable reporting feature.

**Website Link: [JArchitect](http://www.jarchitect.com/" \t "_blank)**

**#28) OCLint**

A standalone tool used for analyzing C/C++ and Objective- C programs, this supports Linux and Mac OX platforms. It does everything a static analysis tool is expected to do like finding bugs, unused piece of code, redundant code, and in addition to all that, it comes with a very customizable configuration which really helps user customize as per their needs.

**Website Link: [OCLint](http://oclint.org/" \t "_blank)**

**#29) Watchtower**

This tool is mainly used by a security specialist who wants to perform manual code reviews, works best on the local system, but can also scan remote websites. Maintains an extensive configuration file and hence different reporting options can be configured. Creation of alternate config files helps in the execution of multiple projects simultaneously.

**Website Link:**[**Watchtower**](https://github.com/chrisallenlane/watchtower)

**#30) OWASP Code Crawler**

A Static analysis tool for .NET and Java/J2EE code

**Website Link:**[**OWASP Code Crawler**](https://www.owasp.org/index.php/Category:OWASP_Code_Crawler)

**#31) OWASP Orizon**

A tool that can be used by a security specialist to perform code reviews from a security point of view. It also provides a set of APIs that can be integrated with security tools to provide code review services.

**Website Link:**[**OWASP Orizon**](https://www.owasp.org/index.php/Category:OWASP_Orizon_Project)

**#32) PC-Lint and Flexe Lint**

This is the best Static Analysis tool used to test C/C++ source code. PC Lint works on windows OS whereas Flexe Lint is designed to work on non-windows OS, and runs on systems that support a C compiler including UNIX.

**Website Link:**[**PC-Lint and Flexe Lint**](http://www.gimpel.com/html/lintinfo.htm)

**#33) IBM Rational Software Analyzer**

IBM Rational provides the user with different types of tool, one such tool is the software analyzer which can be used for static analysis of code. This tool is designed on an extensible framework and integrates well with other Rational products.

**Website Link:**[**IBM Rational Software Analyzer**](https://www-03.ibm.com/software/products/en/ratisoftanalfami)

### Other Tools

**#34) Eclair**

This static analysis tool is a very flexible and easily configurable tool and supports almost all platforms like Windows, UNIX, Linus, Mac OS X.This tool comes with an ability to verify conformance against a number of coding standard as well as other coding standards which include proprietary and project-based standards.

**Website Link:**[**Eclair**](http://bugseng.com/products/%C3%A9clair)

**#35) SonarQube**

[SonarQube Static Code Analysis Tool](https://www.softwaretestinghelp.com/wp-content/qa/uploads/2016/04/Static-Code-Analysis-Tools-27.jpg)

It is an open-source web-based tool, extending its coverage to more than 20 languages, and also allows a number of plugins.

**Website Link:**[**SonarQube**](https://www.sonarqube.org/)

**#36) Rosecheckers**

If you are looking for a tool to ensure the developed code is compliant with CERT coding rules, you can opt for Rosecheckers. It is available for free is SourceForge. This tool does check for C/C++ codes and sometimes finds the problem which other static analysis tools cannot find, but this cannot be considered a full-grown standalone tool due to its inability to fully test since this is only a prototype.

**Website Link: [Rosecheckers](https://www.cert.org/secure-coding/tools/rosecheckers.cfm" \t "_blank)**

**#37) Frama-c**

An open-source tool that lets the analysis of C comes with a very flexible framework.

**Website Link:**[**Frama-c**](http://frama-c.com/)

**#38) Semmle**

Open-source security analysis tool for Java and C codes.

**Website Link: [Semmle](https://semmle.com/" \t "_blank)**

**#39) PMD**

PMD is an open-source code analyzer for C/C++, Java, JavaScript. This is a simple tool and can be used to find common flaws. It also detects duplicate code in java.

**Website Link:**[**PMD**](https://pmd.github.io/)

**#40) FindBugs**

Free tool to find bugs in Java code. It supports any version of Java but requires JRE (or JDK) 1.7.0 or later to run.

**Website Link: [FindBugs](http://findbugs.sourceforge.net/" \t "_blank)**

**#41) HCL Appscan**

This is used to identify vulnerabilities early in the SDLC phase. Also, supports mobile scanning.

**Website Link:**[**HCL Appscan**](https://www.hcltechsw.com/wps/portal/products/appscan/home)

**#42) Flawfinder**

This is an open-source tool mainly used to find security vulnerabilities in C/C++ program. It can be downloaded, installed and run on systems like UNIX.

**Website Link: [Flawfinder](http://www.dwheeler.com/flawfinder/" \t "_blank)**

**#43) Splint**

An open-source static and security analysis tool for C programs. It comes with the very basic feature but if additional annotations are added, this can perform like any other standard tool.

**Website Link:**[**Splint**](http://www.splint.org/)

**#44) Hfcca**

Header Free Cyclomatic Complexity Analyser is a tool that performs analysis and doesn’t care about the C/C++ headers or Java imports. Simple to use and doesn’t require installation. This can be used for C/C++, Java and Objective C.

**Website Link: [Hfcca](https://code.google.com/archive/p/headerfile-free-cyclomatic-complexity-analyzer/" \t "_blank)**

**#45) Cloc**

This utility written in Perl lets the user find blank lines, comment lines, and physical lines and supports multiple languages. Overall an easy to tool with good features like providing outputs in multiple formats runs on multiple systems and comes with an easy installation pack.

**Website Link: [Cloc](https://github.com/AlDanial/cloc" \t "_blank)**

**#46) SLOCCount**

An open-source tool which lets user count physical source lines of code in multiple languages and on multiple platforms.

**Website Link: [SLOCCount](http://www.dwheeler.com/sloccount/" \t "_blank)**

**#47) JSHint**

This is a free tool that supports static analysis of JavaScript.

**Website Link: [JSHint](http://jshint.com/about/" \t "_blank)**

**#48) DeepScan**



DeepScan is an advanced static analysis tool engineered to support JavaScript, TypeScript, React, and Vue.js.

You can use DeepScan to find possible runtime errors and quality issues instead of coding conventions. Integrate with your GitHub repositories to get quality insight into your web project.