SonarSource Security Rules Database

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Comprehensive Static Analysis Rules for Security & Code Quality

Overview

SonarSource provides comprehensive static analysis rules covering:
- Security vulnerabilities (OWASP Top 10, CWE, SANS Top 25)
- Code quality issues
- Bug detection
- Maintainability concerns
The rules are continuously updated and cover modern frameworks and technologies.

Security Focus Areas

- Injection flaws (SQL, Command, LDAP, etc.)
- Cross-Site Scripting (XSS)
- Authentication and session management
- Access control issues
- Security misconfigurations
- Sensitive data exposure
- Cryptographic failures
- Input validation
- Error handling and logging
- Component vulnerabilities

Language-Specific Security Rules

JAVA Security Rules

Found 735 individual rules for JAVA:

Rule 1: Functions should not be defined with a variable number of arguments

URL: https://rules.sonarsource.com/java/RSPEC-923/

Description: Why is this an issue?More Info...

Language: **JAVA**

Rule 2: Return values should not be ignored when they contain the operation status code

URL: https://rules.sonarsource.com/java/RSPEC-899/

Description: Why is this an issue?More Info...

Language: **JAVA**

Rule 3: Equality operators should not be used in "for" loop termination conditions

URL: https://rules.sonarsource.com/java/RSPEC-888/

Description: Why is this an issue?More Info...

Language: **JAVA**

Rule 4: Increment (++) and decrement (--) operators should not be used in a method call or mixed with other operators in an expression

URL: https://rules.sonarsource.com/java/RSPEC-881/

Description: Why is this an issue?More Info...

Language: **JAVA**

Rule 5: Limited dependence should be placed on operator precedence

URL: https://rules.sonarsource.com/java/RSPEC-864/

Description: Why is this an issue?More Info...

Language: **JAVA**

JAVASCRIPT Security Rules

Found 422 individual rules for JAVASCRIPT:

Rule 1: Function calls should not pass extra arguments

URL: https://rules.sonarsource.com/javascript/RSPEC-930/

Description: Why is this an issue?More Info...

Language: **JAVASCRIPT**

Rule 2: "continue" should not be used

URL: https://rules.sonarsource.com/javascript/RSPEC-909/

Description: Why is this an issue?...

Language: **JAVASCRIPT**

Rule 3: Non-empty statements should change control flow or have at least one side-effect

URL: https://rules.sonarsource.com/javascript/RSPEC-905/

Description: Why is this an issue?How can I fix it?More Info...

Language: **JAVASCRIPT**

Rule 4: Equality operators should not be used in "for" loop termination conditions

URL: https://rules.sonarsource.com/javascript/RSPEC-888/

Description: Why is this an issue?More Info...

Language: **JAVASCRIPT**

Rule 5: Increment (++) and decrement (--) operators should not be used in a method call or mixed with other operators in an expression

URL: https://rules.sonarsource.com/javascript/RSPEC-881/

Description: Why is this an issue?...

Language: **JAVASCRIPT**

TYPESCRIPT Security Rules

Found 427 individual rules for TYPESCRIPT:

Rule 1: "continue" should not be used

URL: https://rules.sonarsource.com/typescript/RSPEC-909/

Description: Why is this an issue?...

Language: **TYPESCRIPT**

Rule 2: Non-empty statements should change control flow or have at least one side-effect

URL: https://rules.sonarsource.com/typescript/RSPEC-905/

Description: Why is this an issue?How can I fix it?More Info...

Language: **TYPESCRIPT**

Rule 3: Equality operators should not be used in "for" loop termination conditions

URL: https://rules.sonarsource.com/typescript/RSPEC-888/

Description: Why is this an issue?More Info...

Language: **TYPESCRIPT**

Rule 4: Increment (++) and decrement (--) operators should not be used in a method call or mixed with other operators in an expression

URL: https://rules.sonarsource.com/typescript/RSPEC-881/

Description: Why is this an issue?...

Language: **TYPESCRIPT**

Rule 5: Comma operator should not be used

URL: https://rules.sonarsource.com/typescript/RSPEC-878/

Description: Why is this an issue?More Info...

Language: **TYPESCRIPT**

PYTHON Security Rules

Found 397 individual rules for PYTHON:

Rule 1: AWS waiters should be used instead of custom polling loops

URL: https://rules.sonarsource.com/python/RSPEC-7621/

Description: Why is this an issue?How can I fix it?More Info...

Language: **PYTHON**

Rule 2: Functions and methods should only return expected values

URL: https://rules.sonarsource.com/python/RSPEC-935/

Description: Why is this an issue?How can I fix it?More Info...

Language: **PYTHON**

Rule 3: The number and name of arguments passed to a function should match its parameters

URL: https://rules.sonarsource.com/python/RSPEC-930/

Description: Why is this an issue?More Info...

Language: **PYTHON**

Rule 4: Non-empty statements should change control flow or have at least one side-effect

URL: https://rules.sonarsource.com/python/RSPEC-905/

Description: Why is this an issue?How can I fix it?More Info...

Language: **PYTHON**

Rule 5: Issue suppression comment should have the correct format

URL: https://rules.sonarsource.com/python/RSPEC-7632/

Description: Why is this an issue?How can I fix it?More Info...

Language: **PYTHON**

CSHARP Security Rules

Found 494 individual rules for CSHARP:

Rule 1: Parameter names should match base declaration and other partial definitions

URL: https://rules.sonarsource.com/csharp/RSPEC-927/

Description: Why is this an issue?More Info...

Language: **CSHARP**

Rule 2: "goto" statement should not be used

URL: https://rules.sonarsource.com/csharp/RSPEC-907/

Description: Why is this an issue?...

Language: **CSHARP**

Rule 3: Increment (++) and decrement (--) operators should not be used in a method call or mixed with other operators in an expression

URL: https://rules.sonarsource.com/csharp/RSPEC-881/

Description: Why is this an issue?...

Language: **CSHARP**

Rule 4: Literal suffixes should be upper case

URL: https://rules.sonarsource.com/csharp/RSPEC-818/

Description: Why is this an issue?...

Language: **CSHARP**

Rule 5: Locks should be released within the same method

URL: https://rules.sonarsource.com/csharp/RSPEC-7133/

Description: Why is this an issue?More Info...

Language: **CSHARP**

PHP Security Rules

Found 274 individual rules for PHP:

Rule 1: The number of arguments passed to a function should match the number of parameters

URL: https://rules.sonarsource.com/php/RSPEC-930/

Description: Why is this an issue?More Info...

Language: **PHP**

Rule 2: "goto" statement should not be used

URL: https://rules.sonarsource.com/php/RSPEC-907/

Description: Why is this an issue?...

Language: **PHP**

Rule 3: Non-empty statements should change control flow or have at least one side-effect

URL: https://rules.sonarsource.com/php/RSPEC-905/

Description: Why is this an issue?How can I fix it?More Info...

Language: **PHP**

Rule 4: Increment (++) and decrement (--) operators should not be used in a method call or mixed with other operators in an expression

URL: https://rules.sonarsource.com/php/RSPEC-881/

Description: Why is this an issue?...

Language: **PHP**

Rule 5: Variables should be initialized before use

URL: https://rules.sonarsource.com/php/RSPEC-836/

Description: Why is this an issue?More Info...

Language: **PHP**

GO Security Rules

Found 71 individual rules for GO:

Rule 1: Credentials should not be hard-coded

URL: https://rules.sonarsource.com/go/RSPEC-6437/

Description: Why is this an issue?How can I fix it?More Info...

Language: **GO**

Rule 2: Hard-coded secrets are security-sensitive

URL: https://rules.sonarsource.com/go/RSPEC-6418/

Description: IDE extension that lets you fix coding issues before they exist!...

Language: **GO**

Rule 3: Constructing arguments of system commands from user input is security-sensitive

URL: https://rules.sonarsource.com/go/RSPEC-6350/

Description: IDE extension that lets you fix coding issues before they exist!...

Language: **GO**

Rule 4: Extracting archives should not lead to zip slip vulnerabilities

URL: https://rules.sonarsource.com/go/RSPEC-6096/

Description: Why is this an issue?How can I fix it?More Info...

Language: **GO**

Rule 5: JWT should be signed and verified with strong cipher algorithms

URL: https://rules.sonarsource.com/go/RSPEC-5659/

Description: Why is this an issue?How can I fix it?More Info...

Language: **GO**

KOTLIN Security Rules

Found 176 individual rules for KOTLIN:

Rule 1: Return values should not be ignored when they contain the operation status code

URL: https://rules.sonarsource.com/kotlin/RSPEC-899/

Description: Why is this an issue?More Info...

Language: **KOTLIN**

Rule 2: Sensitive information should not be logged in production builds

URL: https://rules.sonarsource.com/kotlin/RSPEC-7610/

Description: Why is this an issue?How can I fix it?More Info...

Language: **KOTLIN**

Rule 3: WebViews should not be vulnerable to cross-app scripting attacks

URL: https://rules.sonarsource.com/kotlin/RSPEC-7606/

Description: Why is this an issue?How can I fix it?More Info...

Language: **KOTLIN**

Rule 4: Processing persistent unique identifiers is security-sensitive

URL: https://rules.sonarsource.com/kotlin/RSPEC-7435/

Description: IDE extension that lets you fix coding issues before they exist!...

Language: **KOTLIN**

Rule 5: Android production release targets should not be debuggable

URL: https://rules.sonarsource.com/kotlin/RSPEC-7416/

Description: Why is this an issue?How can I fix it?More Info...

Language: **KOTLIN**

SWIFT Security Rules

Found 119 individual rules for SWIFT:

Rule 1: Increment (++) and decrement (--) operators should not be used in a method call or mixed with other operators in an expression

URL: https://rules.sonarsource.com/swift/RSPEC-881/

Description: Why is this an issue?...

Language: **SWIFT**

Rule 2: Cipher algorithms should be robust

URL: https://rules.sonarsource.com/swift/RSPEC-5547/

Description: Why is this an issue?How can I fix it?More Info...

Language: **SWIFT**

Rule 3: Using weak hashing algorithms is security-sensitive

URL: https://rules.sonarsource.com/swift/RSPEC-4790/

Description: IDE extension that lets you fix coding issues before they exist!...

Language: **SWIFT**

Rule 4: Parentheses should be omitted when trailing closure is the only argument

URL: https://rules.sonarsource.com/swift/RSPEC-4233/

Description: Why is this an issue?...

Language: **SWIFT**

Rule 5: Tuples should not be too large

URL: https://rules.sonarsource.com/swift/RSPEC-4188/

Description: Why is this an issue?...

Language: **SWIFT**

RUBY Security Rules

Found 42 individual rules for RUBY:

Rule 1: Multi-line comments should not be empty

URL: https://rules.sonarsource.com/ruby/RSPEC-4663/

Description: Why is this an issue?...

Language: **RUBY**

Rule 2: Methods should not have identical implementations

URL: https://rules.sonarsource.com/ruby/RSPEC-4144/

Description: Why is this an issue?...

Language: **RUBY**

Rule 3: All branches in a conditional structure should not have exactly the same implementation

URL: https://rules.sonarsource.com/ruby/RSPEC-3923/

Description: Why is this an issue?...

Language: **RUBY**

Rule 4: Cognitive Complexity of functions should not be too high

URL: https://rules.sonarsource.com/ruby/RSPEC-3776/

Description: Why is this an issue?More Info...

Language: **RUBY**

Rule 5: Non-existent operators like "=+" should not be used

URL: https://rules.sonarsource.com/ruby/RSPEC-2757/

Description: Why is this an issue?...

Language: **RUBY**

SCALA Security Rules

Found 41 individual rules for SCALA:

Rule 1: Multi-line comments should not be empty

URL: https://rules.sonarsource.com/scala/RSPEC-4663/

Description: Why is this an issue?...

Language: **SCALA**

Rule 2: Methods should not have identical implementations

URL: https://rules.sonarsource.com/scala/RSPEC-4144/

Description: Why is this an issue?...

Language: **SCALA**

Rule 3: All branches in a conditional structure should not have exactly the same implementation

URL: https://rules.sonarsource.com/scala/RSPEC-3923/

Description: Why is this an issue?...

Language: **SCALA**

Rule 4: Cognitive Complexity of functions should not be too high

URL: https://rules.sonarsource.com/scala/RSPEC-3776/

Description: Why is this an issue?More Info...

Language: **SCALA**

Rule 5: Scala parser failure

URL: https://rules.sonarsource.com/scala/RSPEC-2260/

Description: Why is this an issue?...

Language: **SCALA**

CPP Security Rules

Found 618 individual rules for CPP:

Rule 1: "goto" should jump to labels declared later in the same function

URL: https://rules.sonarsource.com/cpp/RSPEC-999/

Description: Why is this an issue?More Info...

Language: **CPP**

Rule 2: The name "main" should not be used for any function other than the global "main" function

URL: https://rules.sonarsource.com/cpp/RSPEC-998/

Description: Why is this an issue?More Info...

Language: **CPP**

Rule 3: The global namespace should only contain "main", namespace declarations, and "extern" C declarations

URL: https://rules.sonarsource.com/cpp/RSPEC-997/

Description: Why is this an issue?More Info...

Language: **CPP**

Rule 4: Pointer and reference parameters should be "const" if the corresponding object is not modified

URL: https://rules.sonarsource.com/cpp/RSPEC-995/

Description: Why is this an issue?More Info...

Language: **CPP**

Rule 5: A variable which is not modified shall be const qualified

URL: https://rules.sonarsource.com/cpp/RSPEC-994/

Description: Why is this an issue?More Info...

Language: **CPP**

C Security Rules

Found 317 individual rules for C:

Rule 1: "goto" should jump to labels declared later in the same function

URL: https://rules.sonarsource.com/c/RSPEC-999/

Description: Why is this an issue?More Info...

Language: **C**

Rule 2: Pointer and reference parameters should be "const" if the corresponding object is not modified

URL: https://rules.sonarsource.com/c/RSPEC-995/

Description: Why is this an issue?More Info...

Language: **C**

Rule 3: "" should not be used

URL: https://rules.sonarsource.com/c/RSPEC-991/

Description: Why is this an issue?More Info...

Language: **C**

Rule 4: "abort", "exit", "getenv" and "system" from should not be used

URL: https://rules.sonarsource.com/c/RSPEC-990/

Description: Why is this an issue?More Info...

Language: **C**

Rule 5: "atof", "atoi" and "atol" from should not be used

URL: https://rules.sonarsource.com/c/RSPEC-989/

Description: Why is this an issue?More Info...

Language: **C**

CSS Security Rules

Found 26 individual rules for CSS:

Rule 1: Expressions within "calc" should be valid

URL: https://rules.sonarsource.com/css/RSPEC-5362/

Description: Why is this an issue?...

Language: **CSS**

Rule 2: Selectors should be known

URL: https://rules.sonarsource.com/css/RSPEC-4670/

Description: Why is this an issue?...

Language: **CSS**

Rule 3: Single line comment syntax should not be used

URL: https://rules.sonarsource.com/css/RSPEC-4668/

Description: Why is this an issue?...

Language: **CSS**

Rule 4: CSS files should not be empty

URL: https://rules.sonarsource.com/css/RSPEC-4667/

Description: Why is this an issue?...

Language: **CSS**

Rule 5: Selectors should not be duplicated

URL: https://rules.sonarsource.com/css/RSPEC-4666/

Description: Why is this an issue?How can I fix it?More Info...

Language: **CSS**

HTML Security Rules

Found 84 individual rules for HTML:

Rule 1: Label elements should have a text label and an associated control

URL: https://rules.sonarsource.com/html/RSPEC-6853/

Description: Why is this an issue?How can I fix it?More Info...

Language: **HTML**

Rule 2: Elements with an interactive role should support focus

URL: https://rules.sonarsource.com/html/RSPEC-6852/

Description: Why is this an issue?How can I fix it?More Info...

Language: **HTML**

Rule 3: Images should have a non-redundant alternate description

URL: https://rules.sonarsource.com/html/RSPEC-6851/

Description: Why is this an issue?How can I fix it?More Info...

Language: **HTML**

Rule 4: Heading elements should have accessible content

URL: https://rules.sonarsource.com/html/RSPEC-6850/

Description: Why is this an issue?How can I fix it?More Info...

Language: **HTML**

Rule 5: Non-interactive DOM elements should not have an interactive handler

URL: https://rules.sonarsource.com/html/RSPEC-6848/

Description: Why is this an issue?How can I fix it?More Info...

Language: **HTML**

DOCKER Security Rules

Found 44 individual rules for DOCKER:

Rule 1: Reduce the amount of consecutive RUN instructions

URL: https://rules.sonarsource.com/docker/RSPEC-7031/

Description: Why is this an issue?How can I fix it?More Info...

Language: **DOCKER**

Rule 2: Malformed JSON in Exec form leads to unexpected behavior

URL: https://rules.sonarsource.com/docker/RSPEC-7030/

Description: Why is this an issue?How can I fix it?More Info...

Language: **DOCKER**

Rule 3: Prefer COPY over ADD for copying local resources

URL: https://rules.sonarsource.com/docker/RSPEC-7029/

Description: Why is this an issue?How can I fix it?More Info...

Language: **DOCKER**

Rule 4: Descriptive labels are mandatory

URL: https://rules.sonarsource.com/docker/RSPEC-7028/

Description: Why is this an issue?How can I fix it?More Info...

Language: **DOCKER**

Rule 5: Use ADD instruction to retrieve remote resources

URL: https://rules.sonarsource.com/docker/RSPEC-7026/

Description: Why is this an issue?How can I fix it?More Info...

Language: **DOCKER**

TERRAFORM Security Rules

Found 52 individual rules for TERRAFORM:

Rule 1: AWS resource tags should have valid format

URL: https://rules.sonarsource.com/terraform/RSPEC-7452/

Description: Why is this an issue?How can I fix it?More Info...

Language: **TERRAFORM**

Rule 2: Excluding users or groups activities from audit logs is security-sensitive

URL: https://rules.sonarsource.com/terraform/RSPEC-6414/

Description: IDE extension that lets you fix coding issues before they exist!...

Language: **TERRAFORM**

Rule 3: Defining a short log retention duration is security-sensitive

URL: https://rules.sonarsource.com/terraform/RSPEC-6413/

Description: IDE extension that lets you fix coding issues before they exist!...

Language: **TERRAFORM**

Rule 4: Unversioned Google Cloud Storage buckets are security-sensitive

URL: https://rules.sonarsource.com/terraform/RSPEC-6412/

Description: IDE extension that lets you fix coding issues before they exist!...

Language: **TERRAFORM**

Rule 5: Google Cloud load balancers SSL policies should not offer weak cipher suites

URL: https://rules.sonarsource.com/terraform/RSPEC-6410/

Description: Why is this an issue?How can I fix it?More Info...

Language: **TERRAFORM**

KUBERNETES Security Rules

Found 26 individual rules for KUBERNETES:

Rule 1: Environment variables for a container should not be duplicated

URL: https://rules.sonarsource.com/kubernetes/RSPEC-6907/

Description: Why is this an issue?How can I fix it?More Info...

Language: **KUBERNETES**

Rule 2: Storage requests should be specified

URL: https://rules.sonarsource.com/kubernetes/RSPEC-6897/

Description: Why is this an issue?How can I fix it?More Info...

Language: **KUBERNETES**

Rule 3: Ensure whitespace in-between braces in template directives

URL: https://rules.sonarsource.com/kubernetes/RSPEC-6893/

Description: Why is this an issue?How can I fix it?More Info...

Language: **KUBERNETES**

Rule 4: CPU requests should be specified

URL: https://rules.sonarsource.com/kubernetes/RSPEC-6892/

Description: Why is this an issue?How can I fix it?More Info...

Language: **KUBERNETES**

Rule 5: Memory requests should be specified

URL: https://rules.sonarsource.com/kubernetes/RSPEC-6873/

Description: Why is this an issue?How can I fix it?More Info...

Language: **KUBERNETES**

DART Security Rules

Found 127 individual rules for DART:

Rule 1: Parameter names should match base declaration

URL: https://rules.sonarsource.com/dart/RSPEC-927/

Description: Why is this an issue?More Info...

Language: **DART**

Rule 2: Allowing unrestricted navigation in WebViews is security-sensitive

URL: https://rules.sonarsource.com/dart/RSPEC-7485/

Description: IDE extension that lets you fix coding issues before they exist!...

Language: **DART**

Rule 3: Processing persistent unique identifiers is security-sensitive

URL: https://rules.sonarsource.com/dart/RSPEC-7435/

Description: IDE extension that lets you fix coding issues before they exist!...

Language: **DART**

Rule 4: Exposing native code through JavaScript interfaces is security-sensitive

URL: https://rules.sonarsource.com/dart/RSPEC-7409/

Description: IDE extension that lets you fix coding issues before they exist!...

Language: **DART**

Rule 5: "child" properties should be placed last in widget instantiation

URL: https://rules.sonarsource.com/dart/RSPEC-7124/

Description: Why is this an issue?How can I fix it?More Info...

Language: **DART**

RUST Security Rules

Found 86 individual rules for RUST:

Rule 1: Match expression conditions should not have boolean type

URL: https://rules.sonarsource.com/rust/RSPEC-920/

Description: Why is this an issue?More Info...

Language: **RUST**

Rule 2: Non-empty statements should change control flow or have at least one side-effect

URL: https://rules.sonarsource.com/rust/RSPEC-905/

Description: Why is this an issue?How can I fix it?More Info...

Language: **RUST**

Rule 3: Infinite iterators should be finished off with a terminating operation

URL: https://rules.sonarsource.com/rust/RSPEC-7464/

Description: Why is this an issue?More Info...

Language: **RUST**

Rule 4: `saturating_sub` should be used to avoid subtraction underflow

URL: https://rules.sonarsource.com/rust/RSPEC-7463/

Description: Why is this an issue?More Info...

Language: **RUST**

Rule 5: `mem::uninitialized` and `mem::zeroed()` should not be used to replace values

URL: https://rules.sonarsource.com/rust/RSPEC-7462/

Description: Why is this an issue?More Info...

Language: **RUST**

INTEGRATION NOTES:
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- Use SonarQube/SonarCloud for automated analysis
- Rules are mapped to industry standards (CWE, OWASP, etc.)
- Regular updates ensure coverage of latest vulnerabilities
- IDE plugins available for real-time analysis
- CI/CD integration supported
For the most current rules, visit: https://rules.sonarsource.com
Total rules database contains 6000+ rules across 30+ languages.