Secrets
ABAP
Apex
C
C++
CloudFormation
COBOL
C#
CSS
Flex
Go
HTML
Java
JavaScript
Kotlin
Kubernetes
Objective C
PHP
PL/I
PL/SQL
Python
RPG
Ruby
Scala
Swift
Terraform
Text
TypeScript
T-SQL
VB.NET
VB6
XML

Kotlin static code analysis

Unique rules to find Bugs, Vulnerabilities, Security Hotspots, and Code Smells in your KOTLIN code

All rules 98 | Vulnerability 10 | Bug 17 | Security Hotspot 15 | Code Smell 56

Tags

Search by name...

Hard-coded credentials are security-sensitive
Security Hotspot

Cipher algorithms should be robust
Vulnerability

Encryption algorithms should be used with secure mode and padding scheme
Vulnerability

Server hostnames should be verified during SSL/TLS connections
Vulnerability

Server certificates should be verified during SSL/TLS connections
Vulnerability

Cryptographic keys should be robust
Vulnerability

Weak SSL/TLS protocols should not be used
Vulnerability

"SecureRandom" seeds should not be predictable
Vulnerability

Cipher Block Chaining IVs should be unpredictable
Vulnerability

Hashes should include an unpredictable salt
Vulnerability

Regular expressions should be syntactically valid
Bug

"runFinalizersOnExit" should not be called
Bug

Hard-coded credentials are security-sensitive

Analyze your code

Security Hotspot Blocker cwe sans-top25 owasp

Because it is easy to extract strings from an application source code or binary, credentials should not be hard-coded. This is particularly true for applications that are distributed or that are open-source.

In the past, it has led to the following vulnerabilities:

- CVE-2019-13466
- CVE-2018-15389

Credentials should be stored outside of the code in a configuration file, a database, or a management service for secrets.

This rule flags instances of hard-coded credentials used in database and LDAP connections. It looks for hard-coded credentials in connection strings, and for variable names that match any of the patterns from the provided list.

It's recommended to customize the configuration of this rule with additional credential words such as "oauthToken", "secret", ...

Ask Yourself Whether

- Credentials allows access to a sensitive component like a database, a file storage, an API or a service.
- Credentials are used in production environments.
- Application re-distribution is required before updating the credentials.

There is a risk if you answered yes to any of those questions.

Recommended Secure Coding Practices

- Store the credentials in a configuration file that is not pushed to the code repository.
- Store the credentials in a database.
- Use your cloud provider's service for managing secrets.
- If a password has been disclosed through the source code: change it.

Sensitive Code Example

```
val params = "password=xxxx" // Sensitive
val writer = OutputStreamWriter(getOutputStream())
writer.write(params)
writer.flush()
...
val password = "xxxx" // Sensitive
...
```

Compliant Solution

```
val params = "password=${retrievePassword()}"
val writer = OutputStreamWriter(getOutputStream())
writer.write(params)
writer.flush()
...
val password = retrievePassword()
...
```

"ScheduledThreadPoolExecutor" should not have 0 core threads

Bug

Jump statements should not occur in "finally" blocks

Bug

Using clear-text protocols is security-sensitive

Security Hotspot

Accessing Android external storage is security-sensitive

Security Hotspot

Receiving intents is security-sensitive

Security Hotspot

Broadcasting intents is security-sensitive

Security Hotspot

Using weak hashing algorithms is security-sensitive

Security Hotspot

Using pseudorandom number generators (PRNGs) is security-sensitive

Security Hotspot

Empty lines should not be tested with regex MULTILINE flag

Code Smell

Cognitive Complexity of functions should not be too high

Code Smell

See

- OWASP Top 10 2021 Category A7 - Identification and Authentication Failures
- OWASP Top 10 2017 Category A2 - Broken Authentication
- MITRE, CWE-798 - Use of Hard-coded Credentials
- MITRE, CWE-259 - Use of Hard-coded Password
- SANS Top 25 - Porous Defenses
- Derived from FindSecBugs rule Hard Coded Password

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