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C# static code analysis

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

All rules 409 | Vulnerability 34 | Bug 76 | Security Hotspot 28 | Code Smell 271 | Quick Fix 52

Tags | Search by name...

Vulnerability

A secure password should be used when connecting to a database
Vulnerability

XPath expressions should not be vulnerable to injection attacks
Vulnerability

I/O function calls should not be vulnerable to path injection attacks
Vulnerability

LDAP queries should not be vulnerable to injection attacks
Vulnerability

OS commands should not be vulnerable to command injection attacks
Vulnerability

Classes should implement their "ExportAttribute" interfaces
Bug

Neither "Thread.Resume" nor "Thread.Suspend" should be used
Bug

"SafeHandle.DangerousGetHandle" should not be called
Bug

Type inheritance should not be recursive
Bug

"IDisposables" should be disposed
Bug

SQL keywords should be delimited by whitespace
Bug

Endpoints should not be vulnerable to reflected cross-site scripting (XSS) attacks

Analyze your code

Vulnerability | Blocker | injection cwe sans-top25 owasp

User-provided data, such as URL parameters, POST data payloads, or cookies, should always be considered untrusted and tainted. Furthermore, when processing an HTTP request, a web server may copy user-provided data into the body of the HTTP response that is sent back to the user. This behavior is called a "reflection". Endpoints reflecting tainted data could allow attackers to inject code that would eventually be executed in the user's browser. This could enable a wide range of serious attacks like accessing/modifying sensitive information or impersonating other users.

Typically, the solution is one of the following:

- Validate user-provided data based on a whitelist and reject input that is not allowed.
- Sanitize user-provided data from any characters that can be used for malicious purposes.
- Encode user-provided data when it is reflected back in the HTTP response. Adjust the encoding to the output context so that, for example, HTML encoding is used for HTML content, HTML attribute encoding is used for attribute values, and JavaScript encoding is used for server-generated JavaScript.

When sanitizing or encoding data, it is recommended to only use libraries specifically designed for security purposes. Also, make sure that the library you are using is being actively maintained and is kept up-to-date with the latest discovered vulnerabilities.

Noncompliant Code Example

```
string name = Request.QueryString["name"];
Response.Write("Hello " + name); // Noncompliant
```

Compliant Solution

```
string name = Request.QueryString["name"];
name = System.Web.Security.AntiXss.AntiXssEncoder.HtmlEncode
Response.Write("Hello " + name);
```

See

- OWASP Top 10 2021 Category A3 - Injection
- OWASP Cheat Sheet - XSS Prevention Cheat Sheet
- OWASP Top 10 2017 Category A7 - Cross-Site Scripting (XSS)
- MITRE, CWE-79 - Improper Neutralization of Input During Web Page Generation ('Cross-site Scripting')
- SANS Top 25 - Insecure Interaction Between Components

Available In:

sonarcloud | sonarqube Developer Edition

Composite format strings should not lead to unexpected behavior at runtime

Bug

Recursion should not be infinite

Bug

Destructors should not throw exceptions

Bug

Hard-coded credentials are security-sensitive

Security Hotspot