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C static code analysis

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

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Tags

Search by name...

"memset" should not be used to delete sensitive data
Vulnerability

POSIX functions should not be called with arguments that trigger buffer overflows
Vulnerability

XML parsers should not be vulnerable to XXE attacks
Vulnerability

Function-like macros should not be invoked without all of their arguments
Bug

The address of an automatic object should not be assigned to another object that may persist after the first object has ceased to exist
Bug

"pthread_mutex_t" should be unlocked in the reverse order they were locked
Bug

"pthread_mutex_t" should be properly initialized and destroyed
Bug

"pthread_mutex_t" should not be consecutively locked or unlocked twice
Bug

Functions with "noreturn" attribute should not return
Bug

"memcmp" should only be called with pointers to trivially copyable types with no padding
Bug

Operands of "&&" and "||" should be primary (C) or postfix (C++) expressions

Analyze your code

Code Smell | Major | based-on-misra

The effect of this rule is to require that operands are appropriately parenthesized. Parentheses are important in this situation both for readability of code and for ensuring that the behavior is as the developer intended.

Where an expression consists of either a sequence of only logical `&&` or a sequence of logical `||`, extra parentheses are not required.

Noncompliant Code Example

```
if (x == 0 && ishigh);                    // Noncompliant
if (x || y || z);
if (x || y && z);                         // Noncompliant
if (x && !y);                             // Noncompliant
if (is_odd(y) && x);
if ((x > c1) && (y > c2) && (z > c3));
if ((x > c1) && (y > c2) || (z > c3));    // Noncompliant
```

Compliant Solution

```
if ((x == 0) && ishigh);
if (x || y || z);
if (x || (y && z));
if (x && (!y));
if (is_odd(y) && x);
if ((x > c1) && (y > c2) && (z > c3));
if ((x > c1) && ((y > c2) || (z > c3)));
```

See

- MISRA C:2004, 12.5 - The operands of a logical && or || shall be primary-expressions.
- MISRA C++:2008, 5-2-1 - Each operand of a logical && or || shall be a postfix-expression.

Available In:

sonarlint | sonarcloud | sonarqube Developer Edition

Stack allocated memory and non-owned memory should not be freed

Bug

Closed resources should not be accessed

Bug

Dynamically allocated memory should be released

Bug

Freed memory should not be used