



**ABAP** Apex

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## C++ static code analysis

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

ΑII 578 6 Vulnerability (13) rules

**R** Bug (111)

o Security Hotspot

**⊗** Code (436)

Quick 68 Fix

Analyze your code

Tags

Variables should be initialized

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

Assigning to an optional should directly target the optional

📆 Bug

Result of the standard remove algorithms should not be ignored

📆 Bug

"std::scoped\_lock" should be created with constructor arguments

📆 Bug

Objects should not be sliced

📆 Bug

Immediately dangling references should not be created

📆 Bug

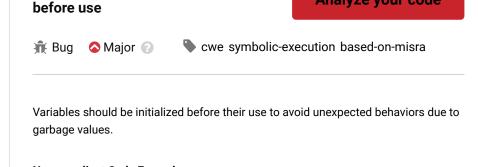
"pthread\_mutex\_t" should be unlocked in the reverse order they were locked

📆 Bug

"pthread\_mutex\_t" should be properly initialized and destroyed

📆 Bug

"pthread\_mutex\_t" should not be consecutively locked or unlocked



## **Noncompliant Code Example**

```
int function(int flag, int b) {
  int a;
  if (flag) {
    a = b;
  return a; // Noncompliant - "a" has not been initialized in
```

## **Compliant Solution**

```
int function(int flag, int b) {
  int a = 0;
  if (flag) {
    a = b;
 }
 return a;
```

## See

- MITRE, CWE-457 Use of Uninitialized Variable
- MISRA C:2004, 9.1 All automatic variables shall have been assigned a value
- MISRA C++:2008, 8-5-1 All variables shall have a defined value before they are used.

Available In:

sonarlint 😁 | sonarcloud 🟡 | sonarqube | Developer Edition

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I
🖟 Bug
"std::move" and "std::forward" should not be confused
<b>∰</b> Bug
A call to "wait()" on a  "std::condition_variable" should have a  condition
n Bug
A pointer to a virtual base class shall only be cast to a pointer to a derived class by means of dynamic_cast
<b>ਜ਼ਿ</b> Bug
Functions with "noreturn" attribute should not return
👬 Bug
RAII objects should not be temporary
्रे Bug
"memcmp" should only be called with pointers to trivially copyable types with no padding
🙃 Bug
"memcpy", "memmove", and "memset" should only be called with pointers to trivially copyable types
🙃 Bug
"std::auto_ptr" should not be used
<b>n</b> Bug
Destructors should be "noexcept"
🖟 Bug