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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

"errno" should not be used

Analyze your code

Code Smell | Critical | based-on-misra suspicious

`errno` is a facility of C++ which should in theory be useful, but which in practice is poorly defined by ISO/IEC 14882:2003. A non-zero value may or may not indicate that a problem has occurred; therefore `errno` shall not be used.

Even for those functions for which the behaviour of `errno` is well defined, it is preferable to check the values of inputs before calling the function rather than relying on using `errno` to trap errors.

Noncompliant Code Example

```
#include <cstdlib>
#include <cerrno>

void f1 (const char * str)
{
  errno = 0; // Noncompliant
  int i = atoi(str);
  if ( 0 != errno ) // Noncompliant
  {
    // handle error case???
  }
}
```

See

- MISRA C:2004, 20.5 - The error indicator errno shall not be used.
- MISRA C++:2008, 19-3-1 - The error indicator errno shall not be used.

See Also

- ISO/IEC 14882:2003

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