```cpp
void* operator new (std::size_t sz)
{
    if (is_real_time_context())
    {
        non_realtime_context nrtc;
        std::cerr << "!!! WARNING: Illegal allocation of " << sz << " bytes\n";
        std::cerr << get_stacktrace();
    }

    return std::malloc (sz);
}
```
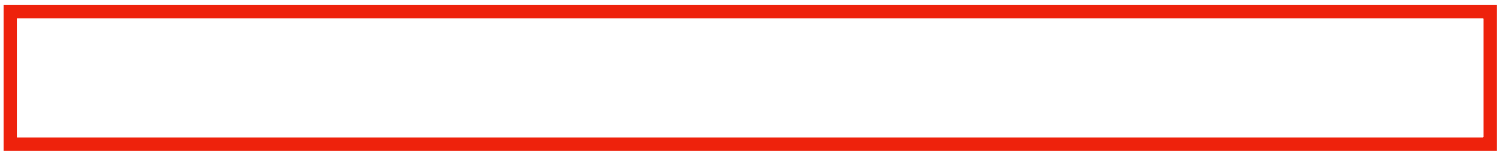
```cpp
void run_rt_thread()
{
    std::mutex m;

    realtime_context rc;

    get_file_size();
    do_malloc_free();
    do_vector_reserve();
    do_mutex_lock_unlock (m);
}
```

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```
!!! WARNING: Illegal allocation of 200 bytes
./example_external(_Z14get_stacktraceB5cxx11v+0x3c) [0xaaaad6f8a1d8]
 ./example_external(_Znwm+0x78) [0xaaaad6f89ae4]
  /lib/aarch64-linux-gnu/libstdc++.so.6(+0x17a44c) [0xffff919da44c]
   /lib/aarch64-linux-gnu/libstdc++.so.6(_ZNSt10filesystem7__cxx114path14_M_split_cmptsEv+0x3a8) [0xffff919da1f8]
    ./example_external(_ZNSt10filesystem7__cxx114pathC1IA13_cS1_EERKT_NS1_6formatE+0x84) [0xaaaad6f880dc]
     ./example_external(_Z13get_file_sizev+0x38) [0xaaaad6f872f4]
      ...

!!! WARNING: Illegal deletion
./example_external(_Z14get_stacktraceB5cxx11v+0x3c) [0xaaaad6f8a1d8]
 ./example_external(_ZdlPvm+0x5c) [0xaaaad6f89e28]
  ./example_external(_ZNSt10unique_ptrINSt10filesystem7__cxx114path5_List5_ImplENS3_13_Impl_deleterEED2Ev+0x50) [0xaaaad6f87f84]
   ./example_external(_ZNSt10filesystem7__cxx114path5_ListD2Ev+0x14) [0xaaaad6f87bc8]
    ./example_external(_ZNSt10filesystem7__cxx114pathD1Ev+0x18) [0xaaaad6f87bec]
     ./example_external(_Z13get_file_sizev+0x50) [0xaaaad6f8730c]
      ...

!!! WARNING: Illegal allocation of 168 bytes
./example_external(_Z14get_stacktraceB5cxx11v+0x3c) [0xaaaad6f8a1d8]
 ./example_external(_Znwm+0x78) [0xaaaad6f89ae4]
  ./example_external(_ZN9__gnu_cxx13new_allocatorIiE8allocateEmPKv+0x6c) [0xaaaad6f898c8]
   ./example_external(_ZNSt16allocator_traitsISaIiEE8allocateERS0_m+0x50) [0xaaaad6f89338]
    ./example_external(_ZNSt12_Vector_baseIiSaIiEE11_M_allocateEm+0x28) [0xaaaad6f88bfc]
     ./example_external(_ZNSt6vectorIiSaIiEE7reserveEm+0x80) [0xaaaad6f882a4]
      ./example_external(_Z17do_vector_reservev+0x34) [0xaaaad6f873b4]
       ...

!!! WARNING: Illegal deletion
./example_external(_Z14get_stacktraceB5cxx11v+0x3c) [0xaaaad6f8a1d8]
 ./example_external(_ZdlPvm+0x5c) [0xaaaad6f89e28]
  ./example_external(_ZN9__gnu_cxx13new_allocatorIiE10deallocateEPim+0x28) [0xaaaad6f89820]
   ./example_external(_ZNSt16allocator_traitsISaIiEE10deallocateERS0_Pim+0x58) [0xaaaad6f891f8]
    ./example_external(_ZNSt12_Vector_baseIiSaIiEE13_M_deallocateEPim+0x30) [0xaaaad6f88b18]
     ./example_external(_ZNSt12_Vector_baseIiSaIiEED1Ev+0x3c) [0xaaaad6f881c0]
      ./example_external(_ZNSt6vectorIiSaIiEED2Ev+0x40) [0xaaaad6f88214]
       ./example_external(_Z17do_vector_reservev+0x3c) [0xaaaad6f873bc]
        ...
```