

New issue

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there are some vulnerabilities in binary mp4tag #770

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yuhanghuang commented on Sep 23 • edited ▼

Summary

Hello, I use my fuzzer to fuzz binary mp4tag , the three binary all crashed, and shows that allocator is out of memory trying to allocate 0xxxxxxx bytes. Then I use the crash input to test binary mpsplit and mp42hevc, and all crashed because of same situation. The version of Bento4 is the latest commit [5b7cc25](#) and the operation system is Ubuntu 18.04(docker). The following is the details. And the issue is different from [#342](#). Because I test the poc, and it didn't work.

Bug1

```
root@76fc65f1cc2f:/Bento4/build# ./mp4tag crash_1.mp4
=====
==206601==ERROR: AddressSanitizer: allocator is out of memory trying to allocate 0xfffffee bytes
#0 0x4f4778 in operator new[](unsigned long) /llvm-project/compiler-rt/lib/asan/asan_new_delete.cpp:102
#1 0x532595 in AP4_DataBuffer::ReallocateBuffer(unsigned int)
/Bento4/Source/C++/Core/Ap4DataBuffer.cpp:210:28
#2 0x532595 in AP4_DataBuffer::SetDataSize(unsigned int)
/Bento4/Source/C++/Core/Ap4DataBuffer.cpp:151:33

==206601==HINT: if you don't care about these errors you may set allocator_may_return_null=1
SUMMARY: AddressSanitizer: out-of-memory /llvm-project/compiler-rt/lib/asan/asan_new_delete.cpp:102 in operator new[](unsigned long)
==206601==ABORTING
```



Bug2

```
root@76fc65f1cc2f:/Bento4/build# ./mp4tag crash_2.mp4
=====
==233834==ERROR: AddressSanitizer: allocator is out of memory trying to allocate 0x1fffffff8 bytes
    #0 0x4f4618 in operator new(unsigned long) /llvm-project/compiler-rt/lib/asan/asan_new_delete.cpp:99
    #1 0x537e3d in AP4_Array<AP4_ElstEntry>::EnsureCapacity(unsigned int) /Bento4/Source/C++/Core/AP4Array.h:172:25
    #2 0x537e3d in AP4_ElstAtom::AP4_ElstAtom(unsigned int, unsigned char, unsigned int, AP4_ByteStream&) /Bento4/Source/C++/Core/AP4ElstAtom.cpp:87:15
    #3 0x537b15 in AP4_ElstAtom::Create(unsigned int, AP4_ByteStream&) /Bento4/Source/C++/Core/AP4ElstAtom.cpp:51:16
    #4 0x50e244 in AP4_AtomFactory::CreateAtomFromStream(AP4_ByteStream&, unsigned int, unsigned int, unsigned long long, AP4_Atom*&) /Bento4/Source/C++/Core/AP4AtomFactory.cpp:590:20
    #5 0x50cfd4 in AP4_AtomFactory::CreateAtomFromStream(AP4_ByteStream&, unsigned long long&, AP4_Atom*&) /Bento4/Source/C++/Core/AP4AtomFactory.cpp:234:14
    #6 0x50c7fe in AP4_AtomFactory::CreateAtomFromStream(AP4_ByteStream&, AP4_Atom*&) /Bento4/Source/C++/Core/AP4AtomFactory.cpp:154:12
    #7 0x53a50e in AP4_File::ParseStream(AP4_ByteStream&, AP4_AtomFactory&, bool) /Bento4/Source/C++/Core/AP4File.cpp:104:12
    #8 0x53a9ed in AP4_File::AP4_File(AP4_ByteStream&, bool) /Bento4/Source/C++/Core/AP4File.cpp:78:5
    #9 0x4f9403 in main /Bento4/Source/C++/Apps/Mp4Tag/Mp4Tag.cpp:821:20
    #10 0x7f0a40dd5c86 in __libc_start_main /build/glibc-CVJwZb/glibc-2.27/csu/./csu/libc-start.c:310

==233834==HINT: if you don't care about these errors you may set allocator_may_return_null=1
SUMMARY: AddressSanitizer: out-of-memory /llvm-project/compiler-rt/lib/asan/asan_new_delete.cpp:99
in operator new(unsigned long)
==233834==ABORTING
```



Environment

clang 11.0.1
clang++ 11.0.1
version:master branch(commit[5b7cc25](#))

Platform

```
$ uname -a
Linux kali 5.10.0-kali9-amd64 #1 SMP Debian 5.10.46-4kali1 (2021-08-09) x86_64 GNU/Linux
```



How to compile

```
export CC=clang
export CXX=clang++
export CFLAGS="-fsanitize=address -g"
export CXXFLAGS="-fsanitize=address -g"
mkdir cmakebuild
cd cmakebuild
cmake -DCMAKE_BUILD_TYPE=Release ..
make
```

POC

[crash.zip](#)

NOTE

I find the two bugs not only exist in latest branch but also exist in latest release version Bento4-1.6.0-639.

Credit

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Han Zheng ([NCNIPC of China](#), [Hexhive](#))
Yin li, Jiayuan Zhang ([NCNIPC of China](#))

Thank for your time!

Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone

Development

No branches or pull requests

1 participant

