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An integer overflow is found in get_long_object() #2738

⊘ Closed

PeiweiHu opened this issue on Jun 25 · 0 comments · Fixed by #2739

Labels

crash

high-priority

Milestone

† 0.4.1

PeiweiHu commented on Jun 25

Contributor

Crash

In Rizin of the current version, an integer overflow is found in get_long_object(). It further leads to a heap buffer overflow. The attacker can launch the DoS attack with a malformed binary.

Work environment

Questions	Answers
OS/arch/bits (mandatory)	Linux 5.18.6-arch1-1
File format of the file you reverse (mandatory)	malformed
Architecture/bits of the file (mandatory)	malformed
rizin -v full output, not truncated (mandatory)	rizin 0.5.0 @ linux-x86-64 commit: 74e499a , build: 2022-06- 25_09:14:00

Expected behavior

run normally

Actual behavior

crash

Steps to reproduce the behavior

Open the attached file (after unzip) with Rizin.

Additional Logs, screenshots, source code, configuration dump, ...

input.zip

```
ERROR: Undefined type in free_object (0)
ERROR: Undefined type in get object (0x0)
ERROR: Undefined type in get_object (0x0)
ERROR: Undefined type in get_object (0x14)
ERROR: Undefined type in get object (0x0)
ERROR: Undefined type in get object (0x2)
ERROR: Undefined type in get_object (0x0)
ERROR: Undefined type in get_object (0x0)
ERROR: Undefined type in get_object (0x40)
ERROR: Undefined type in get_object (0x0)
ERROR: Undefined type in get_object (0x0)
ERROR: Undefined type in get_object (0x40)
ERROR: Undefined type in get object (0x0)
ERROR: Undefined type in get_object (0x0)
ERROR: Copy not implemented for type 7b
../librz/bin/format/pyc/marshal.c:202:18: runtime error: signed integer overflow: 1162871039 * 15 can
______
==2965413==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x7fa62f4647ff at pc 0x7fa63e7319
WRITE of size 1 at 0x7fa62f4647ff thread T0
   #0 0x7fa63e73190c in get_long_object ../librz/bin/format/pyc/marshal.c:219
   #1 0x7fa63e73190c in get_object ../librz/bin/format/pyc/marshal.c:1099
   #2 0x7fa63e7332e5 in get_code_object ../librz/bin/format/pyc/marshal.c:948
   #3 0x7fa63e7305a3 in get_object ../librz/bin/format/pyc/marshal.c:1054
   #4 0x7fa63e7342a6 in get_sections_symbols_from_code_objects ../librz/bin/format/pyc/marshal.c:120
   #5 0x7fa63e439e26 in symbols ../librz/bin/p/bin_pyc.c:126
   #6 0x7fa63e30551b in rz_bin_object_set_items ../librz/bin/bobj.c:419
   #7 0x7fa63e30a21d in rz_bin_object_new ../librz/bin/bobj.c:282
   #8 0x7fa63e2e5ca4 in rz_bin_file_new_from_buffer ../librz/bin/bfile.c:277
   #9 0x7fa63e2f2675 in rz_bin_open_buf ../librz/bin/bin.c:283
   #10 0x7fa63e2f3f72 in rz_bin_open_io ../librz/bin/bin.c:341
   #11 0x7fa63c5fe1a3 in core_file_do_load_for_io_plugin ../librz/core/cfile.c:727
   #12 0x7fa63c5fe1a3 in rz_core_bin_load ../librz/core/cfile.c:974
   #13 0x7fa645326b1d in rz_main_rizin ../librz/main/rizin.c:1147
   #14 0x7fa64482928f (/usr/lib/libc.so.6+0x2928f)
   #15 0x7fa644829349 in __libc_start_main (/usr/lib/libc.so.6+0x29349)
   #16 0x55c82ec2f964 in _start (/usr/local/bin/rizin+0x2964)
0x7fa62f4647ff is located 1 bytes to the left of 65799105-byte region [0x7fa62f464800,0x7fa633324bc1)
allocated by thread T0 here:
   #0 0x7fa6460bfa89 in __interceptor_malloc /usr/src/debug/gcc/libsanitizer/asan/asan_malloc_linux.
   #1 0x7fa63e72e907 in get_long_object ../librz/bin/format/pyc/marshal.c:205
   #2 0x7fa63e72e907 in get_object ../librz/bin/format/pyc/marshal.c:1099
   #3 0x7fa63e7332e5 in get_code_object ../librz/bin/format/pyc/marshal.c:948
   #4 0x7fa63e7305a3 in get_object ../librz/bin/format/pyc/marshal.c:1054
   #5 0x7fa63e7342a6 in get_sections_symbols_from_code_objects ../librz/bin/format/pyc/marshal.c:120
   #6 0x7fa63e439e26 in symbols ../librz/bin/p/bin_pyc.c:126
```

```
#7 0x7fa63e30551b in rz bin object set items ../librz/bin/bobj.c:419
  #8 0x7fa63e30a21d in rz_bin_object_new ../librz/bin/bobj.c:282
  #9 0x7fa63e2e5ca4 in rz_bin_file_new_from_buffer ../librz/bin/bfile.c:277
  #10 0x7fa63e2f2675 in rz bin open buf ../librz/bin/bin.c:283
  #11 0x7fa63e2f3f72 in rz_bin_open_io ../librz/bin/bin.c:341
  #12 0x7fa63c5fe1a3 in core_file_do_load_for_io_plugin ../librz/core/cfile.c:727
  #13 0x7fa63c5fe1a3 in rz_core_bin_load ../librz/core/cfile.c:974
  #14 0x7fa645326b1d in rz_main_rizin ../librz/main/rizin.c:1147
  #15 0x7fa64482928f (/usr/lib/libc.so.6+0x2928f)
SUMMARY: AddressSanitizer: heap-buffer-overflow ../librz/bin/format/pyc/marshal.c:219 in get long obj
Shadow bytes around the buggy address:
 Shadow byte legend (one shadow byte represents 8 application bytes):
 Addressable:
               00
 Partially addressable: 01 02 03 04 05 06 07
 Heap left redzone:
                 fa
 Freed heap region:
                 fd
 Stack left redzone:
                 f1
 Stack mid redzone:
 Stack right redzone:
 Stack after return:
                 f5
 Stack use after scope:
                 f8
 Global redzone:
                 f9
 Global init order:
                 f6
 Poisoned by user:
                 f7
 Container overflow:
                 fc
 Array cookie:
 Intra object redzone:
                 bb
 ASan internal:
 Left alloca redzone:
                 ca
 Right alloca redzone:
==2965413==ABORTING
```





PeiweiHu mentioned this issue on Jun 25

Fix the crash caused by get_long_object() #2739

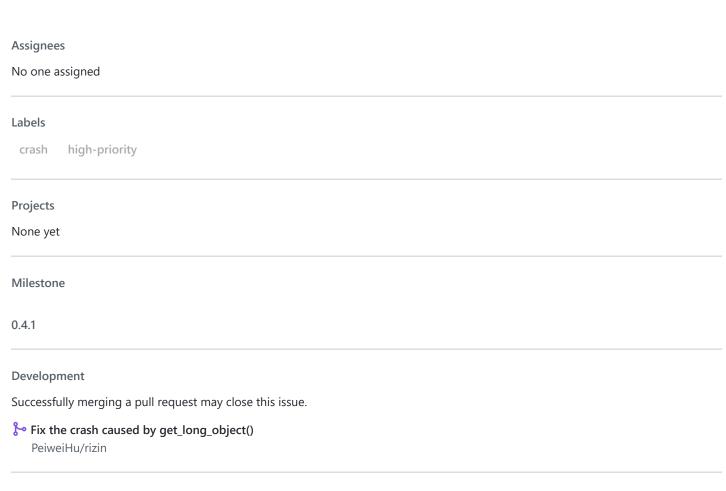












2 participants



