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Several bugs found by fuzzing #188

New issue

○ Closed linhlhq opened this issue on Jan 14, 2020 · 15 comments

Assignees bug fuzzing Labels ф 0.11

linhlhq commented on Jan 14, 2020 After fuzzing libredwg, I found the following bugs on the latest commit on master. Command: ./dwgbmp \$PoC 1.NULL pointer dereference in read_2004_compressed_section ../../src/decode.c:2417 $POC: https://github.com/linhlhq/research/blob/master/PoCs/libreDWG_4c26d37/id:000012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Crep:16/200012\%2Csig:06\%2Csrc:002489\%2Cop:havoc\%2Csrc:002489\%2Csrc:002$ ==20486==ERROR: AddressSanitizer: SEGV on unknown address 0x62904165558b (pc 0x7fa1bce115c5 bp 0x7fff8e06b350 sp 0x7fff8e06aab8 T0) ==20486==The signal is caused by a READ memory access. #0 0x7falbd55e6ce (/lib/x86_64-linux-gnu/libc.so.6+0xbb5c4)
#1 0x7falbd55e6ce (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x796ce)
#2 0x5634364fc7b6 in memcpy /usr/include/x86_64-linux-gnu/bits/string_fortified.h:34 #3 0x5634364fc7b6 in read_2004_compressed_section .././src/decode.c:2478
#4 0x563436ac5dd2 in read_2004_section_summary ./../src/decode.c:2785
#5 0x563436ac5dd2 in decode R2004 ../../src/decode.c:3352
#6 0x563436ad200d in dwg_decode ../../src/decode.c:246 #7 0x563436464fae in dwg_read_file ../../src/dwg.c:211 #8 0x5634364639d0 in get_bmp ../../programs/dwgbmp.c:111 #9 0x563436463066 in main ../../programs/dwgbmp.c:280 #10 0x7fa1bcd77b96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96) #11 0x5634364636c9 in start (/home/user/linhlhq/libredwg/asan build/programs/dwgbmp+0x28f6c9) AddressSanitizer can not provide additional info.
SUMMARY: AddressSanitizer: SEGV (/lib/x86_64-linux-gnu/libc.so.6+0xbb5c4)

linhlha commented on Jan 14, 2020 Author 2.NULL pointer dereference n get_bmp ../../programs/dwgbmp.c:164 POC: https://aithub.com/linhlhg/research/blob/master/PoCs/libreDWG_4c26d37/id:000203%2Csia:06%2Csrc:007151%2B000917%2Cop:splice%2Crep:64 ==31948==ERROR: AddressSanitizer: SEGV on unknown address 0x62c097cf2538 (pc 0x7f0721de463e bp 0x00000e1e1e1e1 sp 0x7ffe6d2c5ea8 T0) ==31948==The signal is caused by a READ memory access. #0 0x7f0721de463d (/lib/x86_64-linux-gnu/libc.so.6+0xbb63d)
#1 0x7f0721de493 in _IO_file_xsputn (/lib/x86_64-linux-gnu/libc.so.6+0x8b993)
#2 0x7f0721da8976 in _IO_fwrite (/lib/x86_64-linux-gnu/libc.so.6+0x7f976) #3 0x555a28f91e64 in get_bmp ../../programs/dwgbmp.c:164 #4 0x555a28f91066 in main ../../programs/dwgbmp.c:280 #5 0x7f0721d4ab96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96) #6 0x555a28f916c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9) AddressSanitizer can not provide additional info. SUMMARY: AddressSanitizer: SEGV (/lib/x86_64-linux-gnu/libc.so.6+0xbb63d)

linhlhq commented on Jan 14, 2020 Author 3.heap-buffer-overflow in read_2004_compressed_section ../../src/decode.c:2417 POC: https://github.com/linhlhg/research/blob/master/PoCs/libreDWG_4c26d37/id:000046%2Csiq:06%2Csrc:005438%2B002843%2Cop:splice%2Crep:2 ==2469==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x62c0000070c0 at pc 0x7f300b076733 bp 0x7ffe0bc1be00 sp 0x7ffe0bc1b5a8 READ of size 33554560 at 0x62c0000070c0 thread T0 #0 0x7f300b076732 (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
#1 0x55cdec4b77b6 in memcpy /usr/include/x86_64-linux-gnu/bits/string_fortified.h:34 #2 0x55cdec4b77b6 in read_2004_compressed_section ../../src/decode.c:2417
#3 0x55cdeca7ea88 in read_2004_section_filedeplist ../../src/decode.c:2888 #4 0x55cdeca7ea88 in decode_R2004 ../../src/decode.c:3361 #5 0x55cdeca8d08d in dwg_decode ../../src/decode.c:246 #6 0x55cdec41ffae in dwg_read_file/src/dwg.c:211 #7 0x55cdec41e9d0 in get_bmp ../../programs/dwgbmp.c:111 #8 0x55cdec41e066 in main ../../programs/dwgbmp.c:280 #9 0x7f300a88fb96 in _libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
#10 0x55cdec41e6c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9) 0x62c0000070c0 is located 0 bytes to the right of 28352-byte region [0x62c000000200,0x62c0000070c0) allocated by thread T0 here: #0 0x7f300b0dbd38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38) #1 0x55cdec41ff41 in dat_read_file ../../src/dwg.c:74 #2 0x55cdec41ff41 in dwg_read_file ../../src/dwg.c:204 SUMMARY: AddressSanitizer: heap-buffer-overflow (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732) Shadow bytes around the buggy address:

```
Addressable:
 Partially addressable: 01 02 03 04 05 06 07 Heap left redzone: fa
 Freed heap region:
 Stack left redzone:
 Stack mid redzone:
 Stack right redzone:
Stack after return:
                  f3
 Stack use after scope:
                  f8
 Global redzone:
Global init order:
 Poisoned by user:
Container overflow:
 Array cookie:
 Intra object redzone:
 ASan internal:
                  fe
 Left alloca redzone:
 Right alloca redzone:
                  cb
==2469==ABORTING
```

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Author
linhlhq commented on Jan 14, 2020
5.heap-buffer-overflow in read 2004 section appinfo ../../src/decode.c:2842
POC: https://github.com/linhlhq/research/blob/master/PoCs/libreDWG_4c26d37/id:000091%2Csig:06%2Csrc:005906%2B004569%2Cop:splice%2Crep:64
  ==8956==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x62c0000070c0 at pc 0x7ff0838d6733 bp 0x7ffd5c5ceb70 sp 0x7ffd5c5ceb70
  READ of size 32768 at 0x62c0000070c0 thread T0
     #0 0x7ff0838d6732 (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732) #1 0x5599a2abd7b6 in memcpy /usr/include/x86_64-linux-gnu/bits/string_fortified.h:34
     #2 0x5599a2abd7b6 in read_2004_compressed_section ../../src/decode.c:2417
      #3 0x5599a3083a9b in read_2004_section_appinfo ../../src/decode.c:2842
      #4 0x5599a3083a9b in decode R2004 ../../src/decode.c:3359
     #5 0x5599a309308d in dwg_decode ../../src/decode.c:246
#6 0x5599a2a25fae in dwg_read_file ../../src/dwg.c:211
     #7 0x5599a2a249d0 in get_bmp ../../programs/dwgbmp.c:111
#8 0x5599a2a24066 in main ../../programs/dwgbmp.c:280
     #9 0x7ff0830efb96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
#10 0x5599a2a246c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
  0x62c0000070c0 is located 0 bytes to the right of 28352-byte region [0x62c000000200,0x62c0000070c0)
  allocated by thread T0 here:
      #0 0x7ff08393bd38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38)
      #1 0x5599a2a25f41 in dat_read_file ../../src/dwg.c:74
      #2 0x5599a2a25f41 in dwg_read_file ../../src/dwg.c:204
  SUMMARY: AddressSanitizer: heap-buffer-overflow (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
  Shadow byte legend (one shadow byte represents 8 application bytes):
    Partially addressable: 01 02 03 04 05 06 07
    Heap left redzone:
    Freed heap region:
    Stack left redzone:
    Stack mid redzone:
                          f2
    Stack right redzone:
                          f3
    Stack after return:
    Stack use after scope:
Global redzone:
    Global init order:
                          f6
    Poisoned by user:
    Container overflow:
    Array cookie:
Intra object redzone:
                          ac
bb
    ASan internal:
    Left alloca redzone:
```

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Author
linhlhq commented on Jan 14, 2020
6.heap-buffer-overflow in read 2004 compressed section ../../src/decode.c:2417
==11971==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x62d0000085c0 at pc 0x7f21ca533733 bp 0x7ffc413ece40 sp 0x7ffc413ec5e8
  READ of size 1179776 at 0x62d0000085c0 thread T0
#0 0x7f21ca533732 (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
      #1 0x5622b14827b6 in memcpy /usr/include/x86_64-linux-gnu/bits/string_fortified.h:34 #2 0x5622b14827b6 in read_2004_compressed_section ../../src/decode.c:2417
     #3 0x5622b1a4bdd2 in read_2004_section_summary ../../src/decode.c:2785
#4 0x5622b1a4bdd2 in decode_R2004 ../../src/decode.c:3352
#5 0x5622b1a5808d in dwg_decode ../../src/decode.c:246
      #6 0x5622b13eafae in dwg_read_file ../../src/dwg.c:211
     #7 0x5622b13e99d0 in get_bmp ../../programs/dwgbmp.c:111
#8 0x5622b13e9066 in main ../../programs/dwgbmp.c:280
#9 0x7f21c9d4cb96 in _libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
      #10 0x5622b13e96c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
  0x62d0000085c0 is located 0 bytes to the right of 33216-byte region [0x62d000000400,0x62d0000085c0)
      #0 0x7f21ca598d38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38)
     #1 0x5622b13eaf41 in dat_read_file ../../src/dwg.c:74
#2 0x5622b13eaf41 in dwg_read_file ../../src/dwg.c:204
  SUMMARY: AddressSanitizer: heap-buffer-overflow (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
  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:
                           f3
    Stack after return:
Stack use after scope:
    Global redzone:
Global init order:
    Poisoned by user:
                           f7
    Container overflow:
    Arrav cookie:
    Intra object redzone:
    ASan internal:
                           fe
    Left alloca redzone:
    Right alloca redzone:
  ==11971==ARORTING
```

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linhlhq commented on Jan 14, 2020
                                                                                                                                                                                                           Author
7.NULL pointer dereference in read 2004 compressed section ../../src/decode.c:2337
POC: https://github.com/linhlha/research/blob/master/PoCs/libreDWG_4c26d37/id:000036%2Csig:06%2Csrc:004273%2Cop:havoc%2Crep:8
   ==15970==ERROR: AddressSanitizer: SEGV on unknown address 0x000000000000 (pc 0x55e389e038c1 bp 0x0000000000000 sp 0x7ffe410ebab0 T0)
   ==15970==The signal is caused by a READ memory access.
  ==15970==Hint: address points to the zero page.
       #0 0x55e389e038c0 in read_2004_compressed_section ../../src/decode.c:2337
       #1 0x55e38a3cb81f in read_2004_section_template ../../src/decode.c:3136
#2 0x55e38a3cb81f in decode_R2004 ../../src/decode.c:3365
       #3 0x55e38a3d908d in dwg decode ../../src/decode.c:246
       #4 0x55e389d6bfae in dwg_read_file ../../src/dwg.c:211
       #5 0x55e389d6a9d0 in get_bmp ../../programs/dwgbmp.c:111 #6 0x55e389d6a066 in main ../../programs/dwgbmp.c:280
       #7 0x7f67aa354b96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
       #8 0x55e389d6a6c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
   AddressSanitizer can not provide additional info.
SUMMARY: AddressSanitizer: SEGV ../../src/decode.c:2337 in read_2004_compressed_section
   ==15970==ABORTING
```

```
8.heap-buffer-overflow in bit_calc_CRC ../../src/bits.c:2213
POC: https://github.com/linhlhq/research/blob/master/PoCs/libreDWG_4c26d37/id:000034%2Csig:06%2Csrc:003269%2B004108%2Cop:splice%2Crep:4

===18234==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x62b000006a00 at pc 0x55d633177a35 bp 0x7ffdcca65160 sp 0x7ffdcca65150
READ of size 1 at 0x62b00006a00 thread T0
#0 0x55d633177a34 in bit_calc_CRC ../../src/bits.c:2213
#1 0x55d633177a34 in bit_calc_CRC ../../src/bits.c:2179
#2 0x55d63374e8b7 in dwg_decode_add_object ../../src/decode.c:5555
```

```
O DXJJUDJJIZJIGE III UWK_ITEGU_IIIE ../../SITC/UWK.C.ZII
   #7 0x55d6331249d0 in get_bmp ../../programs/dwgbmp.c:111 #8 0x55d633124066 in main ../../programs/dwgbmp.c:280
   #9 0x7f3fdd3f6b96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
#10 0x55d6331246c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
0x62b000006a00 is located 0 bytes to the right of 26624-byte region [0x62b000000200,0
allocated by thread T0 here:
   #0 0x7f3fddc42d38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38)
   #1 0x55d6331bcf25 in read_2004_compressed_section ../../src/decode.c:2321
#2 0x55d633c674b2 (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0xdd24b2)
SUMMARY: AddressSanitizer: heap-buffer-overflow ../../src/bits.c:2213 in bit calc CRC
Shadow bytes around the buggy address:
 Shadow byte legend (one shadow byte represents 8 application bytes):
 Addressable:
 Partially addressable: 01 02 03 04 05 06 07 Heap left redzone:
 Freed heap region:
 Stack left redzone:
 Stack mid redzone:
 Stack right redzone:
                        f3
 Stack after return:
 Stack use after scope:
                        f8
 Global redzone:
Global init order:
 Poisoned by user:
                        f7
 Container overflow:
                        fc
 Array cookie:
 Intra object redzone:
                        bb
 ASan internal:
Left alloca redzone:
 Right alloca redzone:
                        ch
==18234==ABORTING
```

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linhlhq commented on Jan 14, 2020
                                                                                                                                                                      Author
9.heap-buffer-overflow in read 2004 section handles ../../src/decode.c:2637
POC:https://github.com/linhlhq/research/blob/master/PoCs/libreDWG_4c26d37/id:000168%2Csiq:06%2Csrc:001038%2Cop:havoc%2Crep:4
  ==21207==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x629000004f20 at pc 0x7fbe8d213733 bp 0x7ffdd9fa0a80 sp 0x7ffdd9fa0228
  READ of size 29696 at 0x629000004f20 thread T0
      #0 0x7fbe8d213732 (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
     #1 0x558f0e7517b6 in memcpy /usr/include/x86_64-linux-gnu/bits/string_fortified.h:34 #2 0x558f0e7517b6 in read_2004_compressed_section ../../src/decode.c:2417
     #3 0x558f0ed15353 in read_2004_section_handles ..../src/decode.c:2637
#4 0x558f0ed15353 in decode_R2004 ../../src/decode.c:3354
#5 0x558f0ed2708d in dwg_decode ../../src/decode.c:246
     #6 0x558f0e6b9fae in dwg_read_file ../../src/dwg.c:211
#7 0x558f0e6b89d0 in get_bmp ../../programs/dwgbmp.c:111
      #8 0x558f0e6b8066 in main ../../programs/dwgbmp.c:280
      #9 0x7fbe8ca2cb96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
      #10 0x558f0e6b86c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
  0x629000004f20 is located 0 bytes to the right of 19744-byte region [0x62900000200,0x629000004f20)
  allocated by thread T0 here
     #0 0x7fbe8d278d38 in _interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38)
#1 0x558f0e6b9f41 in dwt_read_file ../../src/dwg.c:74
#2 0x558f0e6b9f41 in dwg_read_file ../../src/dwg.c:204
  SUMMARY: AddressSanitizer: heap-buffer-overflow (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
  =>0x0c527fff89e0: 00 00 00 00[fa]fa fa fa fa fa fa fa fa fa fa fa
   Shadow byte legend (one shadow byte represents 8 application bytes):
    Addressable:
                        00
    Partially addressable: 01 02 03 04 05 06 07
    Heap left redzone:
    Freed heap region:
Stack left redzone:
    Stack mid redzone:
                           f2
    Stack right redzone:
    Stack after return:
    Stack use after scope:
    Global redzone:
                           f9
    Global init order:
    Poisoned by user:
    Container overflow:
                           fc
    Array cookie:
    Intra object redzone:
ASan internal:
                           bb
    Left alloca redzone:
```

```
Author
linhlhq commented on Jan 14, 2020
10.heap-buffer-overflow in read 2004 section classes ../../src/decode.c:2440
==23880==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x62c0000070c0 at pc 0x7f52bd72c733 bp 0x7ffc9c1738a0 sp 0x7ffc9c173048
  READ of size 29696 at 0x62c0000070c0 thread T0
#0 0x7f52bd72c732 (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
      #1 0x55e8f86a57b6 in memcpy /usr/include/x86_64-linux-gnu/bits/string_fortified.h:34 #2 0x55e8f86a57b6 in read_2004_compressed_section ../../src/decode.c:2417
     #3 0x55e8f86aa24f in read_2004_section_classes .././src/decode.c:2440
#4 0x55e8f8c690d0 in decode_R2004 ../../src/decode.c:3353
#5 0x55e8f8c7b08d in dwg_decode ../../src/decode.c:246
      #6 0x55e8f860dfae in dwg_read_file ../../src/dwg.c:211
     #7 0x55e8f860c9d0 in get_bmp ../../programs/dwgbmp.c:111
#8 0x55e8f860c066 in main ../../programs/dwgbmp.c:280
#9 0x7f52bcf45b96 in _libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
      #10 0x55e8f860c6c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
  0x62c0000070c0 is located 0 bytes to the right of 28352-byte region [0x62c000000200,0x62c00000070c0)
      #0 0x7f52bd791d38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38)
     #1 0x55e8f860df41 in dat_read_file ../../src/dwg.c:74
#2 0x55e8f860df41 in dwg_read_file ../../src/dwg.c:204
  SUMMARY: AddressSanitizer: heap-buffer-overflow (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
  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:
    Stack left redzone:
                            f1
    Stack mid redzone:
    Stack right redzone:
                            f3
    Stack after return:
Stack use after scope:
    Global redzone:
Global init order:
    Poisoned by user:
                            f7
    Container overflow:
    Arrav cookie:
    Intra object redzone:
    ASan internal:
                            fe
    Left alloca redzone:
    Right alloca redzone:
  ==23880==ABORTING
```

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linhlha commented on Jan 14, 2020
                                                                                                                                                                  Author
11.heap-buffer-overflow in read 2004 section preview ../../src/decode.c;3175
POC:https://github.com/linhlhg/research/blob/master/PoCs/libreDWG 4c26d37/id:000016%2Csia:06%2Csrc:000009%2Cop:flip4%2Cpos:27771
  ==28918==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x62c0000070c0 at pc 0x7fee7c87d733 bp 0x7ffdb7a72050 sp 0x7ffdb7a717f8 READ of size 29856 at 0x62c0000070c0 thread T0
     #0 0x7fee7c87d732 (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
      #1 0x55ba7a6407b6 in memcpy /usr/include/x86_64-linux-gnu/bits/string_fortified.h:34
     #2 0x55ba7a6407b6 in read_2004_compressed_section ../../src/decode.c:2417
#3 0x55ba7ac0a602 in read_2004_section_preview ../../src/decode.c:3175
      #4 0x55ba7ac0a602 in decode R2004 ../../src/decode.c:3356
      #5 0x55ba7ac1608d in dwg_decode ../../src/decode.c:246
     #6 0x55ba7a5a8fae in dwg_read_file ../../src/dwg.c:211
#7 0x55ba7a5a79d0 in get_bmp ../../programs/dwgbmp.c:111
#8 0x55ba7a5a7066 in main ../../programs/dwgbmp.c:280
      #9 0x7fee7c096b96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
#10 0x55ba7a5a76c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
   0x62c0000070c0 is located 0 bytes to the right of 28352-byte region [0x62c000000200,0x62c0000070c0)
  allocated by thread T0 here:
     #0 0x7Fee7c8e2d38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38) #1 0x55ba7a5a8f41 in dat_read_file ../../src/dwg.c:74
      #2 0x55ba7a5a8f41 in dwg_read_file ../../src/dwg.c:204
  SUMMARY: AddressSanitizer: heap-buffer-overflow (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
```

```
Freed heap region:
  Stack mid redzone:
                              f2
  Stack right redzone:
  Stack after return:
                              f5
  Stack use after scope:
Global redzone:
  Global init order:
  Poisoned by user:
  Container overflow:
                             fc
  Array cookie:
  Intra object redzone:
                             bb
  ASan internal:
  Left alloca redzone:
Right alloca redzone:
==28918==ABORTING
```

```
Author
linhlhg commented on Jan 14, 2020
12. heap-buffer-overflow in bit_search_sentinel ../../src/bits.c:1985
POC: https://github.com/linhlhq/research/blob/master/PoCs/libreDWG\_4c26d37/id:000009\%2Csig:06\%2Csrc:000009\%2Cop:flip1\%2Cpos:27725
     ==30593==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x6020000003f1 at pc 0x562e9b28f678 bp 0x7ffe7e543550 sp 0x7ffe7e543540
    READ of size 1 at 0x6020000003f1 thread T0
#0 0x562e9b28f677 in bit_search_sentinel ../../src/bits.c:1985
            #1 0x562e9b2bf2c4 in read_2004_section_classes ../../src/decode.c:2449
#2 0x562e9b87e0d0 in decode_R2004 ../../src/decode.c:3353
#3 0x562e9b89008d in dwg_decode ../../src/decode.c:246
              #4 0x562e9b222fae in dwg_read_file ../../src/dwg.c:211
             #5 0x562e9b2219d0 in get_bmp ../../programs/dwgbmp.c:111 #6 0x562e9b221066 in main ../../programs/dwgbmp.c:280
             #7 0x7f561af17b96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96) #8 0x562e9b2216c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
    0x6020000003f1 \ is \ located \ 0 \ bytes \ to \ the \ right \ of \ 1-byte \ region \ [0x6020000003f0,0x6020000003f1) \\ allocated \ by \ thread \ T0 \ here:
             #0 0x7f561b763d38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38)
#1 0x562e9b2b9f25 in read_2004_compressed_section ../../src/decode.c:2321
#2 0x562e9bd644b2 (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0xdd24b2)
     SUMMARY: AddressSanitizer: heap-buffer-overflow ../../src/bits.c:1985 in bit search sentinel
     Shadow bytes around the buggy address:
         0x0c047fff8020: fa fa 00 00 fa fa 00 fa fa fa 00 fa fa fa 00 fa
         0x0c047fff8030: fa fa 00 fa fa fa 00 fa fa fa 60 00 fa fa fa 00 fa fa fa 04 fa 0x0c047fff8040: fa fa 02 fa fa fa 02 fa fa fa 02 fa fa fa 02 fa fa fa 04 fa
        0x0c047fff8050: fa fa 02 fa fa fa 02 fa fa fa 02 fa fa fa 02 fa 0x0c047fff8060: fa fa 02 fa fa fa 02 f
      Shadow byte legend (one shadow byte represents 8 application bytes):
Addressable: 00
         Addressable:
        Partially addressable: 01 02 03 04 05 06 07
Heap left redzone: fa
Freed heap region: fd
         Stack left redzone:
Stack mid redzone:
         Stack right redzone:
                                                                f3
          Stack after return:
                                                                f5
f8
          Stack use after scope:
          Global redzone:
         Global init order:
         Poisoned by user:
         Container overflow:
                                                                fc
          Array cookie:
          Intra object redzone:
                                                               bb
         ASan internal:
Left alloca redzone:
         Right alloca redzone:
      ==30593==ABORTING
```

```
linhlhq commented on Jan 14, 2020
                                                                                                                                                                                         Author
13.memcpy-param-overlap in read 2004 section header ../../src/decode.c:2580
==32738==ERROR: AddressSanitizer: memcpy-param-overlap: memory ranges [0x62c000008200,0x62c000000f600) and [0x62c00000067a0, 0x62c00000dba0) overlap #0 0x7f52a17f7425 (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79425)
      #1 0x55cd4d5ce7b6 in memcpy /usr/include/x86_64-linux-gnu/bits/string_fortified.h:34
      #2 0x55cd4d5ce7b6 in read_2004_compressed_section ../../src/decode.c:2417
#3 0x55cd4db91900 in read_2004_section_header ../../src/decode.c:2580
      #4 0x55cd4db91900 in decode_R2004 ../../src/decode.c:3350
      #5 0x55cd4dba408d in dwg_decode ../../src/decode.c:246
      #6 0x55cd4d536fae in dwg_read_file ../../src/dwg.c:211
      #7 0x55cd4d5359d0 in get_bmp ../../programs/dwgbmp.c:111
#8 0x55cd4d535066 in main ../../programs/dwgbmp.c:280
      #9 0x7f52a1010b96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
      #10 0x55cd4d5356c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
  0x62c000008200 is located 0 bytes inside of 29696-byte region [0x62c000008200,0x62c00000f600)
  allocated by thread T0 here:
      #0 0x7f52a185cd38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38)
      #1 0x55cd4d5cdf25 in read_2004_compressed_section ../../src/decode.c:2321
```

```
#10 0xff523BScd38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38)
#1 0x55cd4d536f41 in dat_read_file ../../src/dwg.c:74
#2 0x55cd4d536f41 in dwg_read_file ../../src/dwg.c:204

SUMMARY: AddressSanitizer: memcpy-param-overlap (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79425)
==32738==ABORTING
```

```
linhlhq commented on Jan 14, 2020
                                                                                                                                                                                    Author
14.heap-buffer-overflow in read_2004_section_revhistory ../../src/decode.c:3051
POC:https://github.com/linhlhg/research/blob/master/PoCs/libreDWG_4c26d37/id:000006%2Csig:06%2Csrc:000009%2Cop:flip1%2Cpos:27665
  ==3444==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x62c0000070c0 at pc 0x7f7b0a9aa733 bp 0x7ffde99cc390 sp 0x7ffde99cbb38
  READ of size 29696 at 0x62c0000070c0 thread T0
      #0 0x7F7b0a9aa732 (/usr/lib/x86_64-linux-gnu/libasan.so.4+0x79732)
#1 0x5651577e87b6 in memcpy /usr/include/x86_64-linux-gnu/bits/string_fortified.h:34
     #2 0x5651577e87b6 in read_2004_compressed_section ..../src/decode.c:2417
#3 0x5651577ea80f in read_2004_section_revhistory ../../src/decode.c:3051
     #4 0x565157db075a in decode_R2004 ../../src/decode.c:3363
#5 0x565157dbe08d in dwg_decode ../../src/decode.c:246
     #6 0x565157750fae in dwg_read_file ../../src/dwg.c:211
#7 0x56515774f9d0 in get_bmp ../../programs/dwgbmp.c:111
#8 0x56515774f066 in main ../../programs/dwgbmp.c:280
      #9 0x7f7b0a1c3b96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
#10 0x56515774f6c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
  0x62c0000070c0 is located 0 bytes to the right of 28352-byte region [0x62c000000200,0x62c00000070c0)
  allocated by thread T0 here:
      #0 0x7f7b0aa0fd38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38)
      #1 0x565157750f41 in dat_read_file ../../src/dwg.c:74 #2 0x565157750f41 in dwg_read_file ../../src/dwg.c:204
  SUMMARY: Address Sanitizer: heap-buffer-overflow~(/usr/lib/x86\_64-linux-gnu/libasan.so.4+0x79732)
  Shadow bytes around the buggy address:
    Shadow byte legend (one shadow byte represents 8 application bytes):
    Addressable:
    Partially addressable: 01 02 03 04 05 06 07 Heap left redzone: fa
    Freed heap region:
                             fd
    Stack left redzone:
    Stack mid redzone:
                             f2
    Stack right redzone:
    Stack after return:
                             f5
    Stack use after scope:
    Global redzone:
    Global init order:
                             f7
    Poisoned by user:
    Container overflow:
Array cookie:
    Intra object redzone:
                             bb
    ASan internal:
    Left alloca redzone:
  Right alloca redzone:
==3444==ABORTING
```

```
linhlhq commented on Jan 14, 2020
                                                                                                                                                            Author
15. heap-buffer-overflow in bit_read_B ../../src/bits.c:135
POC: https://github.com/linhlhq/research/blob/master/PoCs/libreDWG_4c26d37/id:000008%2Csiq:06%2Csrc:000009%2Cop:flip1%2Cpos:27724
  ==6101==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x60c000000998 at pc 0x55fc249a4769 bp 0x7ffe70852d70 sp 0x7ffe70852d60
  READ of size 1 at 0x60c000000998 thread T0
     #0 0x55fc249a4768 in bit_read_B ../../src/bits.c:135
     #1 0x55fc2502c10f in section_string_stream ../../src/decode_r2007.c:1372
#2 0x55fc24a1f8b1 in read_2004_section_classes ../../src/decode.c:2488
     #3 0x55fc24fdc0d0 in decode_R2004 ../../src/decode.c:3353 #4 0x55fc24fee08d in dwg_decode ../../src/decode.c:246
     #5 0x55fc24980fae in dwg_read_file ../../src/dwg.c:211
     #6 0x55fc2497f900 in get_bmp ./../programs/dwgbmp.c:111
#7 0x55fc2497f906 in main ../../programs/dwgbmp.c:280
     #8 0x7fa7b531fb96 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
     #9 0x55fc2497f6c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
  Address 0x60c000000998 is a wild pointer.
  SUMMARY: AddressSanitizer: heap-buffer-overflow ../../src/bits.c:135 in bit_read_B Shadow bytes around the buggy address:
```

```
Partially addressable: 01 02 03 04 05 06 07 Heap left redzone: fa
  Freed heap region:
Stack left redzone:
  Stack mid redzone:
                                 f2
  Stack right redzone:
Stack after return:
  Stack use after scope:
  Global redzone:
  Global init order:
                                 f6
  Poisoned by user:
  Container overflow:
                                 fc
  Array cookie:
  Intra object redzone:
                                hh
  ASan internal:
  Left alloca redzone:
Right alloca redzone:
==6101==ABORTING
```

```
Author
linhlhq commented on Jan 14, 2020
16.heap-buffer-overflow in bit_read_RC ../../src/bits.c:318
\label{poc:https://github.com/linhlhq/research/blob/master/PoCs/libreDWG\_4c26d37/id:000015\%2Csig:06\%2Csrc:000009\%2Cop:flip2\%2Cpos:27803
  ==9805==ERROR: AddressSanitizer: heap-buffer-overflow on address 0x60e00000700 at pc 0x55924d56766b bp 0x7ffdb8bc7a50 sp 0x7ffdb8bc7a40
 #2 0x55924d53da29 in get_bmp ./../programs/dwgbmp.c:120
     #3 0x55924d53d066 in main ../../programs/dwgbmp.c:280 #4 0x7f6cb0f7bb96 in _libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x21b96)
     #5 0x55924d53d6c9 in _start (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0x28f6c9)
  0x60e000000700 is located 0 bytes to the right of 160-byte region [0x60e000000660,0x60e000000700)
 allocated by thread T0 here:
#0 0x7f6cb17c7d38 in __interceptor_calloc (/usr/lib/x86_64-linux-gnu/libasan.so.4+0xded38)
     #1 0x55924d5d5f25 in read_2004_compressed_section ../../src/decode.c:2321
#2 0x55924e0804b2 (/home/user/linhlhq/libredwg/asan_build/programs/dwgbmp+0xdd24b2)
  SUMMARY: AddressSanitizer: heap-buffer-overflow ../../src/bits.c:318 in bit_read_RC
  Shadow bytes around the buggy address:
    0x0c1c7fff8090: fa fa fa fa 00 00 00 00 00 00 00 00 00 00 00 00
   Shadow byte legend (one shadow byte represents 8 application bytes):
   Addressable:
                        00
    Partially addressable: 01 02 03 04 05 06 07
   Heap left redzone:
   Freed heap region:
Stack left redzone:
                          f1
   Stack mid redzone:
Stack right redzone:
   Stack after return:
    Stack use after scope:
   Global redzone:
    Global init order:
   Poisoned by user:
   Container overflow:
   Arrav cookie:
   Intra object redzone:
                          hh
   ASan internal:
   Left alloca redzone:
Right alloca redzone:
  ==9805==ABORTING
```

- R rurban self-assigned this on Jan 16, 2020
- rurban added the bug label on Jan 16, 2020
- rurban added this to the 0.11 milestone on Jan 16, 2020

@ dwgbmp: protect against BMP size overflow ...

- rurban added a commit that referenced this issue on Jan 16, 2020
- rurban added a commit that referenced this issue on Jan 16, 2020

decode: check section sizes ··· d447393

6757b07

