Wine под MCBC

Начало истории для меня

http://etersoft.ru

Проблемы времени выполнения

Первоначальный запуск wine неполностью инициализирует ~/.wine

Симптомы:

```
$ wine
WINE@Etersoft 1.0.8
First running... Using WINEPREFIX=/home/dumb/.wine
Creating default file tree...
/usr/bin/wine: line 194:  2506 Segmentation fault      WINESAFE=yes
"${WINELOADER}" rundll32.exe setupapi.dll,InstallHinfSection DefaultInstall
128 wine.inf
/usr/bin/wine: line 195:  2509 Segmentation fault      WINESAFE=yes
"${WINELOADER}" regedit.exe "$CROOT/windows/inf/vendor.reg"
Building local environment...
Device 'a:' created as link for '/mnt/floppy' target.
...
Device 'lpt4' created as link for '/dev/lp3' target.
/usr/bin/wine: line 268:  2535 Segmentation fault      $WINELOADER wineboot
WINE@Etersoft has been configured for the first time.
Use /home/dumb/wine_c as WINE C:\ disk.
Copy your program into and install it.
```

В результате каталог c:\windows\system32 не содержит dll, но все работает с dll из /usr/lib/wine/. Однако, взяв заполненный c:\windows\system32 ничего запустить не могу:

```
$ wine-kthread ./1cv7s.exe
wine: Unhandled page fault on read access to 0x00000000 at address
0x402586f8 (thread 0009), starting debugger...
err:seh:start_debugger Couldn't start debugger ("winedbg --auto 8 56")
(1359)
Read the Wine Developers Guide on how to set up winedbg or another debugger
```

wine-preloader загружает wine-kthread и падает с segmentation fault при попытке начать его исполнение

Ход разборок:

```
gdb --args /home/dumb/rpmbuild/BUILD/wine-20070915/loader/wine-preloader
/home/dumb/rpmbuild/BUILD/wine-20070915/loader/wine-kthread ./NOTEPAD.EXE
```

```
(gdb) run
...
jumping to 600019c0

Program received signal SIGSEGV, Segmentation fault.
0x60005240 in ?? ()
```

disassemble не работает, потому что исполняемый сегмент загружен самим wine-preloader

```
(gdb) x/64i $eip-32
0x60005220:     call   0x6000195c
0x60005225:     add    $0x20,%esp
0x60005228:     mov    0x164(%ebx),%eax
0x6000522e:     mov    (%eax),%edx
0x60005230:     lea    0xf(%edx),%eax
0x60005233:     and    $0xf0,%al
0x60005235:     sub    %eax,%esp
0x60005237:     mov    %esp,0xffffff6c(%ebp)
0x6000523d:     add    $0xfffffffc,%esp
0x60005240:     push   %edx
```

```
(gdb) info registers
eax            0x1000   4096
ecx            0x802    2050
edx            0x1000   4096
ebx            0x60013868       1610692712
esp            0xbfffdf58       0xbfffdf58
ebp            0xbffff074       0xbffff074
esi            0x63f2b  409387
edi            0x0      0
eip            0x60005240       0x60005240
eflags         0x10293  66195
cs             0x23     35
ss             0x2b     43
ds             0x2b     43
es             0x2b     43
fs             0x0      0
gs             0x0      0
```

получается, после сдвига стека на 0x1000 вниз все сломалось. wine-preloader резервирует мало стека?

Написал тест:

```
void f(int i)
{
  int r[4096];
```

```
  f(i+1);
}

int main()
{
  f(0);
}
```

падает в одном и том же (по стеку и по i) месте, как при обычном запуске, так и при запуске wine-preloader'ом. С объемом стека все в порядке.

Нашел **настоящую** разницу: после загрузки wine-kthread резервирует пямять. Когда он запускается сам по себе картина такова:

```
...
stat("/usr/bin/wineserver", {st_mode=S_IFREG|0755, st_size=343953, ...}) = 0
old_mmap(0x7ffe0000, 1073741824, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x7ffe0000
old_mmap(0x1000, 1110016, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x1000
old_mmap(NULL, 4096, PROT_NONE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0
open("/usr/lib/wine/ntdll.dll.so", O_RDONLY) = 4
...
```

Когда же через wine-preloader:

```
...
stat("/usr/bin/wineserver", {st_mode=S_IFREG|0755, st_size=343953, ...}) = 0
old_mmap(0x7ffe0000, 1073741824, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = -1 ENOMEM (Cannot allocate
memory)
old_mmap(0x7ffe0000, 536870912, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = -1 ENOMEM (Cannot allocate
memory)
old_mmap(0x7ffe0000, 268435456, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x6021a000
munmap(0x6021a000, 268435456)           = 0
old_mmap(0x7ffe0000, 134217728, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x6021a000
munmap(0x6021a000, 134217728)           = 0
old_mmap(0x7ffe0000, 67108864, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x6021a000
...
old_mmap(0x87fe0000, 134217728, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x87fe0000
old_mmap(0x8ffe0000, 268435456, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = -1 ENOMEM (Cannot allocate
memory)
old_mmap(0x8ffe0000, 134217728, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x8ffe0000
```

```
...
old_mmap(0xbffd0000, 65536, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = -1 ENOMEM (Cannot allocate
memory)
old_mmap(0x1000, 1110016, PROT_NONE,
MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = -1 ENOMEM (Cannot allocate
memory)
brk(0x7c004000)                         = 0x7c004000
open("/usr/lib/wine/ntdll.dll.so", O_RDONLY) = 4
fstat(4, {st_mode=S_IFREG|0755, st_size=549156, ...}) = 0
--- SIGSEGV (Segmentation fault) @ 0 (0) ---
...
```

MCBC

From:
http://wiki.osll.ru/ - **Open Source & Linux Lab**

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Last update: **2008/01/03 02:32**