Audacious - Bug #492

Linking fails on i686 with -fstack-protector-strong

December 15, 2014 20:41 - Thomas Lange

Status:	Closed	**Start date:**	December 15, 2014
Priority:	Minor	**Due date:**	
Assignee:		**% Done:**	0%
Category:		**Estimated time:**	0.00 hour
Target version:			
Affects version:	3.6		

Description

Several plugins cannot be linked on a i686 system
with the compiler flag "-fstack-protector-strong".

Originally reported on the Arch Linux AUR page.
Reproduced on Arch Linux i686 with g++ 4.9.2.

Affected plugins:
- cairo-spectrum
- gl-spectrum
- statusicon

The error message and config.log are attached.

History

#1 - December 15, 2014 23:37 - John Lindgren

An undefined reference in libc doesn't seem like a bug in Audacious. Do you have any reason for supposing it to be one, or a proposed fix?

#2 - December 16, 2014 11:25 - Michael Schwendt

The error.txt is truncated. What are the preceeding lines that show how the compiler was invoked?

-fstack-protector-strong is also used by Fedora builds, and the build of 3.6-alpha1 succeeds for i686.

#3 - December 16, 2014 19:13 - Thomas Lange

- File makepkg.log added

@Michael:
The compiler was invoked by the tool "makepkg" of Arch Linux, its complete log file is attached.

The flags are the defaults for Arch Linux:

```
CPPFLAGS="-D_FORTIFY_SOURCE=2"
CFLAGS="-march=i686 -mtune=generic -O2 -pipe -fstack-protector-strong --param=ssp-buffer-size=4"
CXXFLAGS="-march=i686 -mtune=generic -O2 -pipe -fstack-protector-strong --param=ssp-buffer-size=4"
LDFLAGS="-Wl,-O1,--sort-common,--as-needed,-z,relro"
```

@John:
If "-lc" is added to LDFLAGS it links successfully.

#4 - December 16, 2014 19:40 - John Lindgren

Thomas Lange wrote:

> If "-lc" is added to LDFLAGS it links successfully.

"-lc" shouldn't be necessary since we use "g++" for the link command. It should link in the C and C++ runtime libraries automatically, I would think.

#5 - December 17, 2014 00:17 - Michael Schwendt

The default build output is "silent". When the configure script doesn't handle --disable-silent-rules option, something like

sed -i '\,^.SILENT:,d' buildsys.mk.in

to get verbose build output. Only in verbose build output one gets to see compiler/linker warnings which may be relevant.

#6 - December 17, 2014 00:47 - Thomas Lange

- File verbose.log added

Thanks, new verbose output file is attached.

glibc on Arch is compiled without fstack-protector-strong.
https://projects.archlinux.org/svntogit/packages.git/tree/trunk/PKGBUILD?h=packages/glibc#n59
Could this be related? How does Fedora compile it?

#7 - December 17, 2014 01:45 - John Lindgren

Maybe -fstack-protector-strong needs to be in LDFLAGS as well as CFLAGS?

#8 - December 17, 2014 11:51 - Michael Schwendt

It doesn't need to be present in LDFLAGS.

```
$ objdump -tT /usr/lib64/libc.so.6 |grep stack_chk
0000000000000000 l    df *ABS*    0000000000000000              stack_chk_fail.c
00000000001122c0 g     F .text    0000000000000010              __stack_chk_fail
00000000001122c0 g    DF .text    0000000000000010  GLIBC_2.4   __stack_chk_fail
```

> How does Fedora compile it?

glibc build logs: http://koji.fedoraproject.org/koji/buildinfo?buildID=581316

Audacious 3.6-alpha1 i686 build log for a private Fedora 21 build:
https://copr-be.cloud.fedoraproject.org/results/mschwendt/audacious-next/fedora-21-i386/audacious-plugins-3.6-0.3.alpha1.fc21/build.log

```
$ rpm -E %configure
```

```
  CFLAGS="${CFLAGS:--O2 -g -pipe -Wall -Werror=format-security -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-pr
otector-strong --param=ssp-buffer-size=4 -grecord-gcc-switches  -m64 -mtune=generic}" ; export CFLAGS ;
  CXXFLAGS="${CXXFLAGS:--O2 -g -pipe -Wall -Werror=format-security -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstac
k-protector-strong --param=ssp-buffer-size=4 -grecord-gcc-switches  -m64 -mtune=generic}" ; export CXXFLAGS ;
  FFLAGS="${FFLAGS:--O2 -g -pipe -Wall -Werror=format-security -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-pr
otector-strong --param=ssp-buffer-size=4 -grecord-gcc-switches  -m64 -mtune=generic -I/usr/lib64/gfortran/modu
les}" ; export FFLAGS ;
  FCFLAGS="${FCFLAGS:--O2 -g -pipe -Wall -Werror=format-security -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-
protector-strong --param=ssp-buffer-size=4 -grecord-gcc-switches  -m64 -mtune=generic -I/usr/lib64/gfortran/mo
dules}" ; export FCFLAGS ;
  LDFLAGS="${LDFLAGS:--Wl,-z,relro }"; export LDFLAGS;
  [ "1" = 1 ] && for i in $(find . -name config.guess -o -name config.sub) ; do
      [ -f /usr/lib/rpm/redhat/$(basename $i) ] && /usr/bin/rm -f $i && /usr/bin/cp -fv /usr/lib/rpm/redhat/$(
basename $i) $i ;
  done ;
  [ "1" = 1 ] && [ x != "x" ] &&
      for i in $(find . -name ltmain.sh) ; do
        /usr/bin/sed -i.backup -e 's~compiler_flags=$~compiler_flags=""~' $i
      done ;
  ./configure --build=x86_64-redhat-linux-gnu --host=x86_64-redhat-linux-gnu \
    --program-prefix= \
    --disable-dependency-tracking \
    --prefix=/usr \
    --exec-prefix=/usr \
    --bindir=/usr/bin \
    --sbindir=/usr/sbin \
    --sysconfdir=/etc \
    --datadir=/usr/share \
    --includedir=/usr/include \
    --libdir=/usr/lib64 \
    --libexecdir=/usr/libexec \
    --localstatedir=/var \
    --sharedstatedir=/var/lib \
    --mandir=/usr/share/man \
    --infodir=/usr/share/info
```

#9 - December 17, 2014 17:45 - John Lindgren

So can we say:

1. Compiling with -fstack-protector-strong works fine on Fedora, so there's something different about the Arch Linux makepkg environment that is (directly or indirectly) causing the problem.
2. A workaround for makepkg is to link with "-lc", but this is only a workaround, not a proper fix, since libc ought to be linked in automatically.

... and close this report?

#10 - December 18, 2014 12:06 - Michael Schwendt

1. Agreed. It seems the toolchain is broken with Arch Linux.
2. True. It's g++'s responsibility to link with the C/C++/GCC/Math libs as needed, not Audacious'.

#11 - December 18, 2014 20:21 - Thomas Lange

- Status changed from New to Closed

All right, marking as closed.

#12 - December 28, 2014 17:08 - Thomas Lange

The issue was solved by the lastest updates.
binutils 2.25 and GCC 4.9.2 20141224 now link successfully.

Files

config.log	71.8 KB	December 15, 2014	Thomas Lange
error.txt	722 Bytes	December 15, 2014	Thomas Lange
makepkg.log	39.6 KB	December 16, 2014	Thomas Lange
verbose.log	6.08 KB	December 17, 2014	Thomas Lange