Subject: Re: Makefile for external calls on Solaris 9 (64-bit)
Posted by Michael Wallace on Mon, 29 Mar 2004 17:10:41 GMT
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What kind of errors do you see when you try to compile your code on
Solaris? Knowing what to do is a little more complicated than including
C_FLAGS, LD_FLAGS, etc. Can you provide an example of the makefile
you're using?

-Mike

Subject: Re: Makefile for external calls on Solaris 9 (64-bit)
Posted by Rick Towler on Mon, 29 Mar 2004 17:35:14 GMT
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"Brandon Whitcher" wrote...

> I am relatively new to IDL and have produced some code that calls
> external C routines according to Ronn Kling's book (1st edition). I
> had it working under RedHat linux, but have recently acquired a
> Sunblade workstation and am having trouble compiling the code. I must
> admit, my knowledge of libraries, makefiles and compiling C code is
> limited.

What C compiler?

Sun or GCC?

Do Ronn's examples compile on your Sunblade?

-Rick

Subject: Re: Makefile for external calls on Solaris 9 (64-bit)
Posted by bjwhitcher on Tue, 30 Mar 2004 09:09:42 GMT
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Michael Wallace <mwallace.removethis@swri.edu.invalid> wrote in message
news:<106gm45g9rje7e2@corp.supernews.com>...
> What kind of errors do you see when you try to compile your code on
> Solaris? Knowing what to do is a little more complicated than including
> C_FLAGS, LD_FLAGS, etc. Can you provide an example of the makefile
> you're using?
>
> -Mike

Here is example output...

```
% make
gcc -O2 -Wall -fPIC -m64 -I/usr/local/idl_6.0/external -c
simpleExample.c
gcc -O2 -Wall -fPIC -m64 -I/usr/local/idl_6.0/external -c   IDL_Load.c
IDL_Load.c: In function `IDL_Load':
IDL_Load.c:14: warning: missing braces around initializer
IDL_Load.c:14: warning: (near initialization for
`procedure_addr[0].funct_addr')
IDL_Load.c:18: warning: missing braces around initializer
IDL_Load.c:18: warning: (near initialization for
`function_addr[0].funct_addr')
ld -64 -G -o simpleExample.so\
      simpleExample.o IDL_Load.o
ld: fatal: file /usr/ucblib/libucb.so: wrong ELF class: ELFCLASS32
ld: fatal: file /usr/lib/libresolv.so: wrong ELF class: ELFCLASS32
ld: fatal: file /usr/lib/libsocket.so: wrong ELF class: ELFCLASS32
ld: fatal: file /usr/lib/libnsl.so: wrong ELF class: ELFCLASS32
ld: fatal: file /usr/lib/libelf.so: wrong ELF class: ELFCLASS32
ld: fatal: File processing errors. No output written to
simpleExample.so
*** Error code 1 (ignored)
```

... I've added additional libraries like /usr/ucblib/sparcv9 and
/usr/lib/sparcv9, which gets rid of the linking problems but the code
fails in IDL...

```
% SIMPLEFUNCTION: Error loading sharable executable.
          Symbol: IDL_Load, File = simpleExample.so
          ld.so.1:
/usr/local/idl_6.0/bin/bin.solaris2.sparc64/idl:
          fatal: /usr/ucblib/libucb.so.1: wrong ELF class:
          ELFCLASS32
```

Example makefile...

```
IDL_DIR       = /usr/local/idl_6.0
CC  = gcc
CFLAGS  =
C_FLAGS  = -O2 -Wall -fPIC -m64 -I$(IDL_DIR)/external -c $(CFLAGS)
LD   = ld
SHELL  = /bin/sh
X_CFLAGS =
X_LD_FLAGS = -64 -G
LD_LIBS  = -L /usr/ucblib/sparcv9 -L /usr/lib/sparcv9
SO_EXT  = so
```

```
.c.o :
 $(CC) $(C_FLAGS) $(X_CFLAGS) $*.c

simpleExample : simpleExample.$(SO_EXT)
 @date

simpleExample.$(SO_EXT) : simpleExample.o IDL_Load.o
 -$(LD) $(X_LD_FLAGS) $(LD_LIBS) -o simpleExample.$(SO_EXT)\
   simpleExample.o IDL_Load.o

clean :
 rm -f *.o *.so so_locations
```

cheers...
Brandon

Subject: Re: Makefile for external calls on Solaris 9 (64-bit)
Posted by bjwhitcher on Tue, 30 Mar 2004 09:16:40 GMT
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"Rick Towler" <rtowler@u.washington.edu> wrote in message
news:<c49mq5sec1@nntp6.u.washington.edu>...
> "Brandon Whitcher" wrote...
>
>> I am relatively new to IDL and have produced some code that calls
>> external C routines according to Ronn Kling's book (1st edition). I
>> had it working under RedHat linux, but have recently acquired a
>> Sunblade workstation and am having trouble compiling the code. I must
>> admit, my knowledge of libraries, makefiles and compiling C code is
>> limited.
>
> What C compiler?
>
>
> Sun or GCC?

gcc

> Do Ronn's examples compile on your Sunblade?

I haven't tried them because I need the appropriate
flags/libraries/etc... for 64-bit compilation.

I could try them in 32-bit mode and then run 32-bit IDL... wait.
No, they don't compile on my Sunblade.

Brandon

Subject: Re: Makefile for external calls on Solaris 9 (64-bit)
Posted by Rick Towler on Tue, 30 Mar 2004 17:25:57 GMT

Just a guess, but it still doesn't seem like you are linking correctly. I
get the same error (except the 32/64 are swapped) when I try to load a 64bit
dlm in the 32bit version of IDL which is what I would expect. So it seems
that your DLM is still 32-bit?

I don't know, and unfortunately I can't point you to a tool that could tell
you more, but I can suggest using gcc to link instead of ld. I'm compiling
64bit DLMs and I *think* they would work in the 64bit version of IDL and
that is the only real difference that I can see between your makefile and
mine.

CC=gcc
X_CFLAGS=-fPIC -m64 -mcpu=v9
X_LD_FLAGS=-shared -m64
LD=gcc
LD_LIBS=

-Rick

----- Original Message -----
From: "Brandon Whitcher"
Newsgroups: comp.lang.idl-pvwave
Sent: Tuesday, March 30, 2004 1:09 AM
Subject: Re: Makefile for external calls on Solaris 9 (64-bit)

> Michael Wallace wrote...
>> What kind of errors do you see when you try to compile your code on
>> Solaris? Knowing what to do is a little more complicated than including
>> C_FLAGS, LD_FLAGS, etc. Can you provide an example of the makefile
>> you're using?
>>
>> -Mike
>
> Here is example output...
>
> % make
> gcc -O2 -Wall -fPIC -m64 -I/usr/local/idl_6.0/external -c

> simpleExample.c
> gcc -O2 -Wall -fPIC -m64 -I/usr/local/idl_6.0/external -c   IDL_Load.c
> IDL_Load.c: In function `IDL_Load':
> IDL_Load.c:14: warning: missing braces around initializer
> IDL_Load.c:14: warning: (near initialization for
> `procedure_addr[0].funct_addr')
> IDL_Load.c:18: warning: missing braces around initializer
> IDL_Load.c:18: warning: (near initialization for
> `function_addr[0].funct_addr')
> ld -64 -G -o simpleExample.so\
>   simpleExample.o IDL_Load.o
> ld: fatal: file /usr/ucblib/libucb.so: wrong ELF class: ELFCLASS32
> ld: fatal: file /usr/lib/libresolv.so: wrong ELF class: ELFCLASS32
> ld: fatal: file /usr/lib/libsocket.so: wrong ELF class: ELFCLASS32
> ld: fatal: file /usr/lib/libnsl.so: wrong ELF class: ELFCLASS32
> ld: fatal: file /usr/lib/libelf.so: wrong ELF class: ELFCLASS32
> ld: fatal: File processing errors. No output written to
> simpleExample.so
> *** Error code 1 (ignored)
>
> ... I've added additional libraries like /usr/ucblib/sparcv9 and
> /usr/lib/sparcv9, which gets rid of the linking problems but the code
> fails in IDL...
>
> % SIMPLEFUNCTION: Error loading sharable executable.
>   Symbol: IDL_Load, File = simpleExample.so
>   ld.so.1:
> /usr/local/idl_6.0/bin/bin.solaris2.sparc64/idl:
>   fatal: /usr/ucblib/libucb.so.1: wrong ELF class:
>   ELFCLASS32
>
> Example makefile...
>
> IDL_DIR   = /usr/local/idl_6.0
> CC = gcc
> CFLAGS =
> C_FLAGS = -O2 -Wall -fPIC -m64 -I$(IDL_DIR)/external -c $(CFLAGS)
> LD = ld
> SHELL = /bin/sh
> X_CFLAGS =
> X_LD_FLAGS = -64 -G
> LD_LIBS = -L /usr/ucblib/sparcv9 -L /usr/lib/sparcv9
> SO_EXT = so
>
>
> .c.o :
> $(CC) $(C_FLAGS) $(X_CFLAGS) $*.c
>

```
> simpleExample : simpleExample.$(SO_EXT)
> @date
>
> simpleExample.$(SO_EXT) : simpleExample.o IDL_Load.o
> -$(LD) $(X_LD_FLAGS) $(LD_LIBS) -o simpleExample.$(SO_EXT)\
> simpleExample.o IDL_Load.o
>
> clean :
> rm -f *.o *.so so_locations
>
>
> cheers...
> Brandon
```

Subject: Re: Makefile for external calls on Solaris 9 (64-bit)
Posted by bjwhitcher on Wed, 31 Mar 2004 08:08:41 GMT
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"Rick Towler" <rtowler@u.washington.edu> wrote in message
news:<c4cakp$r6k$1@nntp6.u.washington.edu>...
> Just a guess, but it still doesn't seem like you are linking correctly. I
> get the same error (except the 32/64 are swapped) when I try to load a 64bit
> dlm in the 32bit version of IDL which is what I would expect. So it seems
> that your DLM is still 32-bit?
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> I don't know, and unfortunately I can't point you to a tool that could tell
> you more, but I can suggest using gcc to link instead of ld. I'm compiling
> 64bit DLMs and I *think* they would work in the 64bit version of IDL and
> that is the only real difference that I can see between your makefile and
> mine.
>
> CC=gcc
> X_CFLAGS=-fPIC -m64 -mcpu=v9
> X_LD_FLAGS=-shared -m64
> LD=gcc
> LD_LIBS=

Rick,

I modified my Makefile, using gcc with your flags instead of ld, and
it works! Thanks for the help.

Brandon