Subject: Re: IDL code with fortran subroutine and C linker on OSX
Posted by Haje Korth on Fri, 01 Jul 2005 12:39:43 GMT
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Besides the underscore that Nigel mentions, typical mistakes are spelling of
the function; they are CASE SENSITIVE.

Haje

"Nigel Wade" <nmw@ion.le.ac.uk> wrote in message
news:d9tro2$6gd$1@south.jnrs.ja.net...
> laurel wrote:
>
>> In nutshell, my problem is with linking all of my different language
>> codes together. One of the languages seem to thing there should be a
>> leading underscore on a subroutine name, and I just don't know why.
>> Here's a more detailed explanation of what is going on.
>>
>
> Typically FORTRAN compilers add underscores to external names to
> differentiate them from identically named externals in C. This allows you
> to have C code with an external idenifier of MYFUNC call a FORTRAN
> function
> called MYFUNC without any conflict. The C code would call the external
> name
> _MYFUNC or _MYFUNC_ or MYFUNC_ depending on where the FORTRAN compiler
> adds
> underscores.
>
>> I have an IDL code, and a fortran subroutine called mainsub. I have a C
>> linker as a go-between from IDL and fortran called field_c. They both
>> compile fine on their own, but don't seem to want to be linked. Here is
>> my set of compiling commands so far:
>>
>> f90 -c mainsub.f
>> gcc -c field_c.c
>> (these both work fine)
>> gcc -bundle -flat_namespace -fno-leading-underscore -o field_c.so
>> field_c.o mainsub.o KT_2003_sub.o
>> (KT is another fortran subroutine called in mainsub)
>
> Normally you would use the FORTRAN compiler to the linking. That way it
> knows which FORTRAN libraries to link in. What's the purpose of the
> -fno-leading-underscore flag? Does it do anything during linkage?
>
>>
>> My problem is that when I enter the last line I get:

>> "ld: Undefined symbols:
>> _mainsub_
>> ___A_FWF
>> __CLOSE...."
>>
>> and several more.
>>
>> In field_c.c, I call "mainsub_" because I think that fortran adds the
>> extra "_" as a suffix. I have tried with and without the suffix, and
>> with and without a prefix. I can't call the subroutine "_mainsub" in
>> the fortran code because subroutines can't start with underscores. I
>> really don't know where these extra underscores are coming from, and
>> what the subroutines are called in the .o files.
>
> If looks like FORTRAN is adding both a leading and trailing underscore.
> Try
> calling _mainsub_. I would think that __A_FWF and __CLOSE are FORTRAN
> intrinsics which are in whatever FORTRAN library the FORTRAN compiler
> would
> normally link in. Try linking with f90 rather than gcc.
>
>>
>> So, does anyone know where I could find the symbol tables for my .o
>> files (both C and fortran?). Or, even better, has anyone done this on a
>> Mac OSX, ran into this problem, and been able to fix it. Any help would
>> be appreciated as I think I might be nearing the end of my creativity
>> on the matter.
>>
>> Thanks so much,
>> Laurel
>
> The nm command should show you the complete list of external names in a
> object file. I've never used OSX, or OpenBSD for that matter. But it's not
> too disimilar from Linux, and the gcc parts should be the same.
>
> --
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