
Subject: Re: IDL calling a Fortran routines
Posted by [Haje Korth](#) on Mon, 23 May 2005 18:11:26 GMT
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I don't think you even need the c wrapper. I have done this in the past using wrappers in fortran similar to the one below, which works on Lahey Fortran. This work on IVF and CVF too, only the DLL_EXPORT statement varies between the compilers. Don't forget to tell youe fortran compiler to create a dll insted of lib.

Cheers, Haje.

```
REAL*4 FUNCTION SUM_ARRAY(ARGC, ARGV)

DLL_EXPORT SUM_ARRAY

INTEGER*4 ARGC, ARGV(*)

J=LOC(ARGC)

CALL SUM_ARRAY1(%VAL(ARGV(1)),%VAL(ARGV(2)),%VAL(ARGV(3)))

SUM_ARRAY=9.9

RETURN

END
```

<jianguang.guo@gmail.com> wrote in message
news:1116859283.041232.74090@o13g2000cwo.googlegroups.com...
> Hi,I'm a new guy for IDL.I want to call a fortran routine from idl.The
> guide of the IDL tell me that the easy way is by using call_external.
> It seems that most examples are under unix or other OS. When I call
> fortran code via C wrapper,I does not know how to get the
> "example.dll"(I try to run the 'example_c2f.c' from the external
> development guide,but fail). I use IDL6.0 under win2000. I hope to get
> some detailed examples on win.Thanks
>

Subject: Re: IDL calling a Fortran routines

Thank you for your help. I just do by this way, but get the result as follow:

```
IDL> shlib='F:\RS\IDL60\DEV\projects\test\new.dll'
IDL> s=call_external(shlib,'sum_array',x,n_elements(x),sum)
% CALL_EXTERNAL: Error loading sharable executable.
      Symbol: sum_array, File =
F:\RS\IDL60\DEV\projects\test\new.dll
      ERROR_PROC_NOT_FOUND
% Execution halted at: $MAIN$
```

The fortran code like this:

```
SUBROUTINE SUM_ARRAY(ARGC, ARGV)

!DEC$ ATTRIBUTES DLLEXPORT :: SUM_ARRAY

INTEGER*4 ARGC, ARGV(*)

J=LOC(ARGC)

CALL SUM_ARRAY1(%VAL(ARGV(1)),%VAL(ARGV(2)),%VAL(ARGV(3)))

RETURN

END

! This subroutine is called by SUM_ARRAY and has no
! IDL specific code.

SUBROUTINE SUM_ARRAY1(array, n, sum)

INTEGER*4 n
REAL*4 array(n), sum

sum=0.0
DO i=1,n
sum = sum + array(i)
ENDDO
RETURN
END
```

I use IDL6.0 under win2000 with Compaq Visual Fortran 6. There is no problem when I compile the fortran code. And I get the new.dll by this way:

In the visual development environment, after you open a workspace:
> From the Project menu, click Settings to display the project settings dialog box Click the Fortran tab Select the Library category In the Use Fortran Run-Time Libraries box, select DLL.

I do not what happen to my code ,the dll or the fortran code?

Best regards

Jianguang Guo

Haje Korth wrote:

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> wrappers in fortran similar to the one below, which works on Lahey Fortran.
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> insted of lib.
>
> Cheers, Haje.
>
>
>
> REAL*4 FUNCTION SUM_ARRAY(ARGC, ARGV)
>
> DLL_EXPORT SUM_ARRAY
>
> INTEGER*4 ARGC, ARGV(*)
>
>
> J=LOC(ARGC)
>
>
> CALL SUM_ARRAY1(%VAL(ARGV(1)),%VAL(ARGV(2)),%VAL(ARGV(3)))
>
>
> SUM_ARRAY=9.9
>
>
> RETURN
>
> END

Subject: Re: IDL calling a Fortran routines

Posted by [Haje Korth](#) on Tue, 24 May 2005 12:26:54 GMT

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Well, let's see. Nothing looks terribly wrong, but it seems the symbol can't be located within the dll. What do you get if you type "link /dump /exports new.dll"?

Haje

```
<jianguang.guo@gmail.com> wrote in message
news:1116918889.279489.172390@f14g2000cwb.googlegroups.com.. .
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> !DEC$ ATTRIBUTES DLLEXPORT :: SUM_ARRAY
>
> INTEGER*4 ARGC, ARGV(*)
>
>
> J=LOC(ARGC)
>
>
> CALL SUM_ARRAY1(%VAL(ARGV(1)),%VAL(ARGV(2)),%VAL(ARGV(3)))
>
> RETURN
>
> END
> ! This subroutine is called by SUM_ARRAY and has no
> ! IDL specific code.
>
>   SUBROUTINE SUM_ARRAY1(array, n, sum)
>
>
>   INTEGER*4 n
>   REAL*4 array(n), sum
>
>   sum=0.0
>   DO i=1,n
```

```

>     sum = sum + array(i)
>     ENDDO
>     RETURN
>     END
>
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> Jianguang Guo
> Haje Korth wrote:
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>> CALL SUM_ARRAY1(%VAL(ARGV(1)),%VAL(ARGV(2)),%VAL(ARGV(3)))
>>
>>
>> SUM_ARRAY=9.9

```

```
>>
>>
>> RETURN
>>
>> END
>
```

Subject: Re: IDL calling a Fortran routines
Posted by [jianguang.guo](#) on Tue, 24 May 2005 14:02:17 GMT
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sorry there's no such command as "link/dump/exports new.dll" on my platform(win2000+compaq VF),but i think you really want to know this:

```
F:\FORTRAN\new>dumpbin/exports new.dll
Microsoft (R) COFF Binary File Dumper Version 6.00.8447
Copyright (C) Microsoft Corp 1992-1998. All rights reserved.
```

Dump of file new.dll

File Type: DLL

Section contains the following exports for new.dll

```
    0 characteristics
42932E57 time date stamp Tue May 24 21:38:31 2005
    0.00 version
      1 ordinal base
      2 number of functions
      2 number of names
```

ordinal hint RVA name

```
  1  0 00001000 SUM_ARRAY
  2  1 00001000 _SUM_ARRAY@8
```

Summary

```
1000 .data
1000 .rdata
1000 .reloc
1000 .text
```

Best regards,
Jianguang Guo
Haje Korth wrote:

> Well, let's see. Nothing looks terribly wrong, but it seems the
symbol can't
> be located within the dll. What do you get if you type "link
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> /exports new.dll"?
>

Subject: Re: IDL calling a Fortran routines
Posted by [Haje Korth](#) on Tue, 24 May 2005 14:58:38 GMT
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Link is part of Visual Studio, but dumpbin works fine too. It seems like the
export is there and its all in capitalized letters. You need to capitalize
'SUM_ARRAY' in your call, its case sensitive.

Haje

<jianguang.guo@gmail.com> wrote in message
news:1116943337.260117.148300@g43g2000cwa.googlegroups.com.. .
> sorry there's no such command as "link/dump/exports new.dll" on my
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> Copyright (C) Microsoft Corp 1992-1998. All rights reserved.
>
>
> Dump of file new.dll
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> File Type: DLL
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> ordinal hint RVA name
>
> 1 0 00001000 SUM_ARRAY
> 2 1 00001000 _SUM_ARRAY@8
>
> Summary

>
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> 1000 .rdata
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> Best regards,
> Jianguang Guo
> Haje Korth wrote:
>> Well, let's see. Nothing looks terribly wrong, but it seems the
> symbol can't
>> be located within the dll. What do you get if you type "link
> /dump
>> /exports new.dll"?
>>
>

Subject: Re: IDL calling a Fortran routines
Posted by [jianguang.guo](#) on Thu, 26 May 2005 03:09:13 GMT
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bingo,you're right. I get the desired result,thank you very much

cheers,

Jianguang Guo

Haje Korth wrote:

> Link is part of Visual Studio, but dumpbin works fine too. It seems like the
> export is there and its all in capitalized letters. You need to capitalize
> 'SUM_ARRAY' in your call, its case sensitive.
>
> Haje

Subject: Re: IDL calling a Fortran routines
Posted by [ismxray@yahoo.com](#) on Fri, 27 May 2005 14:38:08 GMT
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Can we do the same thing on Linux using intel Fortran 8.1 or even gnu
Fortran?
I tried but it cannot recognize the "dll_export".
