
Subject: Re: passing idl structures in call_external ?
Posted by [Robert Cannon](#) on Wed, 10 Apr 1996 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Christian Soelle wrote:

>
> As the subject already says, does anybody know how to pass idl-structures
> to a C-function using CALL_EXTERNAL. I couldn't find anything in the help
> nor in the example programs supplied.
>

I don't know anything official, but as the previous reply said, they generally turn out to be aligned the same way between c and IDL. I use the routine below (structtoc) to produce a c header file to declare the structure once I have defined it in IDL.

I hope it is of some use,
Robert

Neuroscience Research Group
School of Biological Sciences
Southampton, UK SO16 7PX
rcc@hera.neuro.soton.ac.uk

```
FUNCTION structname, a
  hhh = gethelp ('a')
  hh = hhh(0)
  fa = strpos (hh, '->')
  fb = strpos (hh, 'Arra')

  nn = strmid (hh, fa+2, fb - (fa+2) )
  IF strlen (nn) EQ 2 THEN nn = 'annon'
  return, strlowercase (nn)
END
```

PRO structtoc, strin

```

        ; given an idl structure str, write a c
        ;header file declaring this struture

str = strin

        ; types, as returned by size
types = ['undefined ', $ ; 0
        'byte ', $ ; 1
        'short int ', $ ; 2
        'int ', $ ; 3
        'float ', $ ; 4
        'double ', $ ; 5
        'complex ', $ ; 6
        'string ', $ ; 7
        'struct ', $ ; 8
        'dcomplex ' ]

nt = n_tags (str)
tn = strlowercase (tag_names (str))

nel = n_elements (str)

IF nel gt 1 THEN BEGIN
        ; str is an array of structures
        subs = str(0)
        structtoc, subs
END ELSE BEGIN

        ; check to see if it contains any
structures
        FOR i = 0, nt-1 DO BEGIN
            sf = size (str.(i))
            sr = reverse (sf)

            IF sr(1) EQ 6 OR sr(1) EQ 7 OR sr(1) EQ 10 OR sr(1) EQ 0 THEN
BEGIN
                message, 'cant do this structure - dont like types'
                END

                IF sr(1) EQ 8 THEN BEGIN
                    subs = str.(i)
                    structtoc, subs
                END
            END
        END

        stnm = structname (str)

        print, 'typedef struct '
        print, '{'

```

```

FOR i = 0, nt-1 DO BEGIN
    sf = size (str.(i))
    sr = reverse (sf)
    vardec = types (sr(1))
    IF sr(1) EQ 8 THEN BEGIN
        ; get the name of the structure
        a = str.(i)
        vardec = structname (a)
    END

    IF sf(0) EQ 0 THEN BEGIN
        line = vardec + tn(i) + ';'
    END ELSE BEGIN
        IF sf(0) GT 1 THEN BEGIN
            print, /* following is an idl multidimensional
array: '
            print, fix(sf(0)), ' dims: ', fix(sf(1:sf(0))), '*/'
        END

        line = vardec + tn(i) + $
            '[' + strtrim(string(sr(0)), 2) + ']' + ';'
    END
    print, ' ' + line
END

print, '}' + stnm + ';'
print
print
END
END

```
