
Subject: IDL crashes when calling DLL from FORTRAN
Posted by [TANG Jian](#) on Wed, 06 May 2015 17:35:57 GMT
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Hi, everyone

IDL do loops quit slow so I try to use fortran to speed up.

here is my code in Fortran

```
SUBROUTINE NMC_ENS_BOX_AVERAGING_IDL(argc, argv) !Called by IDL
INTEGER*8 argc, argv(*)      !Argc and Argv are integers

j = LOC(argc)

!DEC$ ATTRIBUTES DLLEXPORT :: NMC_ENS_BOX_AVERAGING_IDL

CALL NMC_ENS_BOX_AVERAGING_F90(%VAL(argv(1)), %VAL(argv(2)), %VAL(argv(3)), &
                           %VAL(argv(4)), %VAL(argv(5)), %VAL(argv(6)), &
                           %VAL(argv(7)), %VAL(argv(8)), %VAL(argv(9)), &
                           %VAL(argv(10)), %VAL(argv(11)))

RETURN
END

Subroutine NMC_ENS_BOX_AVERAGING_F90(obs, nobs, obsX, obsY, &
                                       lons, lats, NX, NY, &
                                       maskGrid, firstGuess, &
                                       gValue)
implicit none

integer*8          :: nobs
integer*4          :: NX, NY
real*4, dimension(nobs)  :: obs, obsX, obsY
integer (kind=1)    :: maskGrid(NX,NY)
real*4              :: firstGuess(NX,NY)
real*4              :: lons(NX,NY), lats(NX,NY)
real*4              :: gValue(NX,NY)

integer            :: ix, iy, isn
real*4             :: sCount(NX,NY)
real*4             :: dist(NX,NY)
integer            :: mindex(2)

! define grid values

gValue = 0.0
Return
```

!//// IF i return here , nothing happen

sCount = 0.0

Return

!//// IF i return, IDL crash

What looked like in IDL is

```
FORTRAN_Status = CALL_EXTERNAL(FORTRAN_DLL,
'NMC_ENS_BOX_AVERAGING_IDL', $
reform(data_out[t,*]), nObs, stationLon, stationLat, $
maskLon, maskLat, FIX(NLON), FIX(NLAT), $  
mask_GRID, firstGuess, $  
data_output, /F_VALUE)
```

```
FORTRAN_DLL STRING = 'nmc_ens_box_averaging_f90.dll'  
<Expression> STRING = 'NMC_ENS_BOX_AVERAGING_IDL'  
<Expression> FLOAT = Array[40532]  
NOBS LONG = 40532  
STATIONLON FLOAT = Array[40532]  
STATIONLAT FLOAT = Array[40532]  
MASKLON FLOAT = Array[1261, 721]  
MASKLAT FLOAT = Array[1261, 721]  
<Expression> INT = 1261  
<Expression> INT = 721  
MASK_GRID BYTE = Array[1261, 721]  
FIRSTGUESS FLOAT = Array[1261, 721]  
DATA_OUTPUT FLOAT = Array[1261, 721]
```

I am aware that number of arguments and their types could cause crash.

If someone could help me on that...Thanks verymuch

I have been debugging all night.....

Best

Jian