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Subject: IDL crashes when calling DLL from FORTRAN  
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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(argv)
```

```
!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, istn
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 happend

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

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