
Subject: Getting BIG structures into IDL via CALL_EXTERNAL
Posted by [Randall Skelton](#) on Wed, 15 Nov 2000 08:00:00 GMT
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Hello all,

I am trying to pass an array of structures (which are very large) into IDL. The structure does contains strings; how should I pass them? (i.e. do I have to use IDL_STRING and if so, how?) The dimensions and format of each structure is:

```
struct atheader
{
    /* 8 strings, for a total of 160 bytes */
    char runlabl[16], acomment[72], afilter[4], source[12];
    char obsloc[12], detector[8], cspare1[32], forrev[4];

    /* 30 integers, Bytes 160-279 */
    int jspare1[6], dataqual, dataymd, datatape, goddsect;
    int aalias, mxpptloc, numint, lastmod, afring, indzpd;
    int afftsiz, comgain, afirst, numprim, hrrno, losamp1;
    int losamp2, sclfct, ippver, avgver, ratver, thid, thver, thymd;

    /* 50 floats, Bytes 280-479 */
    float step, inrelhum, intemp, inpres, spmaxval, r spare1, zpdgmt;
    float intsym, phassym, noise, obsalt, solzen, tanht, latitude;
    float longtude, tanpres, preserr, gainrat, intfmax, intsumsq;
    float spesumsq, specarea, intnoise, spmaxfrq, arzero, spsumval;
    float exttemp, extpres, exthum, fovmag, extfov, angmslgn, pointoff;
    float scdopp, tplat, tplon, r spare3[14];

    /* 4 doubles, Bytes 480-512 */
    double lasemfrq, wifact, dspare1[2];
};
```

Has anyone tried to do such a thing? I have it all working very nicely in C but I am having some troubles getting the data into IDL. Is it possible even to get an array of structures into IDL in one operation? The IDL manual does give an example of passing an array into IDL...

Any and all help is greatly appreciated!
Randall

Subject: Re: Getting BIG structures into IDL via CALL_EXTERNAL
Posted by [Rob Preece](#) on Tue, 21 Nov 2000 08:00:00 GMT
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In article <U0bR5.170\$3.2484@uchinews>, "Mark Rivers"
<rivers@cars.uchicago.edu> wrote:

```
> Randall Skelton wrote in message ...
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>> IDL. The structure does contains strings; how should I pass them?
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>> possible
>> even to get an array of structures into IDL in one operation? The IDL
>> manual does give an example of passing an array into IDL...
>
> This can be done, but you need to be careful about your use of the term
> "pass an array of structures into IDL". When using CALL_EXTERNAL you
> need
> to create any variables which will passed from IDL to the library OR
> returned from the library to IDL, in IDL prior to the call and pass them
> to
> the C code. Thus, in this case you need to create the array of
> structures
> in IDL, then pass it by reference to the C code. You need to make sure
> the
> IDL structure has the same layout as the C structure, which it generally
> will if you are careful with int vs short, etc. There could potentially
> be
> a problem if IDL decided to use difference padding (alignment) in your
> structure than C, but I have never found this to be a problem, and I have
> done what you are proposing.
>
> Mark Rivers
>
>
```

I would second this, and only add that STRINGS should be formatted in IDL as BYTE arrays. btw, we went over to DLMS recently for our external code and will never go back to CALL_EXTERNAL.

- Rob

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