Subject: Re: dlm creating an array?
Posted by John-David T. Smith on Tue, 03 Apr 2001 19:49:55 GMT
View Forum Message <> Reply to Message

Randall Skelton wrote:
>
> Hello all,
>
> Is there a way to make a dlm that creates an IDL array?
>
> i.e. I am writing a simple file reading dlm that reads a binary file and
> generates a 1 dimensional array (or vector) and I would like this array
> returned to IDL such that the function syntax is something like:
>
> IDL> return = file_reader("test.bin", a);
>
> where "return" is for error checking, "test.bin" is the file to read, and
> "a" is what I would like the *new* array to be called.
>
> Is there something like, "IDL_StoreArray" as opposed to "IDL_StoreScalar?"
>
> Any and all hints and suggestions are greatly appreciated!

Two ways. Here is the better:

```
void test_array(int argc, IDL_VPTR argv[])
{
  float *test;
  int i;
  IDL_MEMINT dim[2];
  IDL_VPTR tmp;

  dim[0]=dim[1]=10;
  /* Make Sure we can write to it, free anything already associated */
  IDL_StoreScalarZero(argv[0], IDL_TYP_LONG);

  test=(float *)IDL_MakeTempArray(IDL_TYP_FLOAT,
2,dim,IDL_ARR_INI_NOP,&tmp);
  IDL_VarCopy(tmp,argv[0]); /* This is the key.  Copy tmp to passed arg
*/
  for(i=0;i<100;i++) test[i]=i*i;
}
```

That is, you make a temporary array, and copy it over to the passed argument (no data is actually copied, since it's a temporary). The StoreScalarZero makes sure it's passed by reference.

This method is easiest. Another way is to make your own data, and then use IDL_Import_Array to wrap an IDL_VPTR around it (also no copying performed). They are basically equivalent, but the typing is more up front with a the temporary variable method.

Please note that I did not free the tmp VPTR with IDL_DelTmp(). Why? Because it was already reclaimed by IDL_VarCopy (which in this case is more of a renaming than a copy). Doing so twice is a no-no.

What if you have an arbitrary number of dimensions (read from the file perhaps)? I'd simply declare dim[IDL_MAX_ARRAY_DIM] instead, and test to ensure this limit isn't surpassed.

Good luck,

JD
