## Subject: Re: "Share data with external processes" Posted by davidf on Thu, 16 Jan 1997 08:00:00 GMT

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Ken Stone <k.a.stone@larc.nasa.gov> writes:

- > Does anyone know of a fast way to transfer a large array (say
- > fltarr(2000)) from another process? My first thought was to write the
- > data to a file, and then read it back into IDL. But time is of
- > a critical nature in this case. Then I found CALL EXTERNAL, but it
- > seems to only return a scalar (Is that true?).

Well, this is \*literally\* true, but it's not what you mean. CALL\_EXTERNAL accepts parameters just like any other IDL procedure or function and these parameters can be passed by reference or by value to the C program. Your large array will be one of these parameters. You can think of it as sort of an output parameter to a normal IDL procedure.

The only real caveat to using CALL\_EXTERNAL to pass data is that the variable must be created and sized on the IDL side. You can fill it on the C side, but don't change its data type or size. Your code will look something like this:

```
dataArray = FLTARR(2000)
junk = CALL_ETERNAL('fill_it.so', 'fillarray', dataArray)
PLOT, dataArray
```

The first two parameters to CALL\_EXTERNAL are the name of the shared object library you have to create and the entry point name into that library (i.e, the function in the library you are calling).

The only difficult part of using CALL\_EXTERNAL (and it is not \*always\* difficult) is getting the shared object module made correctly. This is compiler and operating system specific. RSI provides lots of example Make files to help with this, but if you have a wierd compiler you are sometimes on your own.

- > LINKIMAGE now looks
- > like the way to go. Has anyone had any luck using LINKIMAGE to pass
- > around arrays like this? What is the best way to "share data with
- > external processes"? (I put that in quotes because it's in the RSI
- > advertisement for IDL. :-))

LINKIMAGE is harder to use than CALL\_EXTERNAL and requires that you know significantly more about how IDL works internally. I would say you pretty much have to be an expert C programmer to work with LINKIMAGE, while even someone like me can usually get CALL\_EXTERNAL

to work. ;-)		
Good luck!		
David		

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Coyote's Guide to IDL Programming: http://www.dfanning.com