Subject: IDL XDR Problem
Posted by Justin Baker on Mon, 07 Jul 1997 07:00:00 GMT
View Forum Message <> Reply to Message

Hi there,

I've got a problem with IDL when reading XDR data generated by a C program.
I can happily read in longs or floats, but IDL gives a strange error when I try and read in strings.

i.e % READU: Error encountered reading from file. Unit: 1

My program is very simple, for example

```
...
max_recs = 1000
rec = {i:0, l:0L, f:0.0, s:''}
data = replicate(rec,max_recs)

openr, /XDR, 1, bin_file,ERROR=err

rec_count = 0

while ((rec_count lt max_recs) and (NOT EOF(1))) do begin

        readu, 1, rec
        data(rec_count) = rec
        rec_count = rec_count + 1
endwhile
```

One clue (that hasn't really helped !) is the IDL v4 user's guide (p 17-33). It demonstrates all that is needed to read XDR data into an IDL program, but the C code it provides shows strings being written out using a routine called xdr_counted_string().

Our machine (running AIX) only has xdr_string() and I can't find a reference to this other routine on any other platforms (such as Sun) either.

Has anyone else had a similar problem to mine ?

Thanks in advance,
Justin.

Subject: Re: IDL XDR Problem
Posted by jackel[1] on Mon, 07 Jul 1997 07:00:00 GMT
View Forum Message <> Reply to Message

In article <33C09104.41C6@bom.gov.au> Justin Baker <justinb@bom.gov.au> writes:

> I've got a problem with IDL when reading XDR data generated by a C
> program.
> I can happily read in longs or floats, but IDL gives a strange error
> when I try and read in strings.

Unfortunately, IDL seems to define XDR strings in a peculiar way. According to the IRIX Network Communications Guide, a string should have a 4-byte field which gives the length, followed by the string contents, then enough padding zeros to give a length which is a multiple of four bytes. Consequently, the string "abcde" would be written (in hex) as

00 00 00 05 61 62 63 64 65 00 00 00

However, according to the IDL users guide "The length of strings is saved and restored along with the string". What they seem to mean by this is that the string length is written _twice_, so "abcde" would be

00 00 00 05 00 00 00 05 61 62 63 64 65 00 00 00

This means that you can't read a standard XDR string in as an IDL string. You'll need to do some kludge like reading it in as a variable length byte array (padded to a multiple of four bytes) , then converting it to a string. Some longword swapping may be required, it's been a while since I ran across this, and the details are a bit fuzzy. Good luck.

Brian Jackel