Subject: Re: Double-Precision Byte Swap
Posted by Peter Mason on Tue, 28 Apr 1998 07:00:00 GMT
View Forum Message <> Reply to Message

On 28 Apr 1998, R. Kyle Justice wrote:
> Using PV-Wave in UNIX, is there a way to read
> double-precision floating point data generated
> on a PC?
> I think I need something something similar to
> the BYTEORDER procedure, but I need to (or do I?)
> swap 8 instead of 4 bytes.

Assuming that the data are IEEE double-precision (almost certainly), yes, you just need to reverse the order of each number's 8 bytes.
(But note that if it's Digital Unix that you're using then you should NOT re-order.)

I don't use PV-Wave, but here's a little IDL routine for the job:

```
;================================
  ; Reverse the byte order of a whatever
  pro byterev,v
  j=size(v) &nj=n_elements(j) &t=j(nj-2) &n=j(nj-1)
  if (t le 1) or (t ge 7) then return   ;undefined, or inappropriate type
  case t of
   2:byteorder,v,/sswap    ;short
   3:byteorder,v,/lswap    ;long
   4:byteorder,v,/lswap    ;float
   5:begin &for i=0L,n-1L do v(i)=double(rotate(byte(v(i),0,8),2),0) &end  ;double
   6:byteorder,v,/lswap    ;complex (it works, too!)
  endcase
  return
  end
;================================
```

Peter Mason