Subject: Re: UNsigned Integer Data
Posted by davidf on Wed, 05 Feb 1997 08:00:00 GMT
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Marc Kippen <marc.kippen@msfc.nasa.gov> writes:

> Can anyone tell me how to convert between signed and unsigned
> short integer data formats in IDL?

There is no unsigned integer format in IDL. :-)

> e.g., how can I decode a byte array into an unsigned short
> integer? The FIX function automatically interprets the sign
> bit as a sign, rather than a data bit.

Marc, I'm going to assume that what you mean by this is that you have unsigned 16-bit integers in a binary or unformated data file. And you want to know how to interpret this data properly in IDL.

Suppose your have a 256 by 256 array of these 16-bit integers in your binary data file. You will do something like this:

```
    ; Read the data as IDL signed integers (16-bit)

  array = INTARR(256, 256)
  OPENR, lun, unsignedIntDataFile, /GET_LUN
  READU, lun, array
  FREE_LUN, lun

    ; Convert the SIGNED integers to UNSIGNED values.

  array = LONG(array) AND 'FFFF'x
```

Now you have an array of LONG integers, but they have the correct unsigned values. There is no way to get around the requirement for LONG integers unless your data is always between 0 and 2^31-1 or 2147483647.

(If you have a 256 by 256 byte array [another way to interpret your question], then you will want to make array = INTARR(128,128) to read the data correctly.)

Cheers!

David

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