Subject: Re: help with reading unsigned 16-bit integers
Posted by dcleon@gmail.com on Sun, 09 Dec 2007 09:37:47 GMT
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On Dec 9, 12:28 am, te...@atmsci.msrc.sunysb.edu wrote:
> Hi,
>
> I am reading a HDF file and one of the SDS is an unsigned 16-bit
> integer. According to documentation, the bits have certain meanings.
> The bits go from 1 to 16. For example, bits 1-3 represent feature
> type (0- invalid, 1-'clean air', 2-'cloud', ...). This is data from
> NASA's Calipso Vertical Feature Mask (in case your wondering).
>
> I have no idea what's going on when I read the SDS. For example, I
> get the following ouput:
>
>> HDF_SD_GETDATA,sds_id,Feature_Classification_Flags
>> FEATURE_CLASSIFICATION_FLAGS UINT = Array[5515, 3744]
>
> IDL> print,FEATURE_CLASSIFICATION_FLAGS(5500:5514,3743)
> 8221 8221 8221 8221 8221 16413 16413 16413
> 16413 16413 16413 16413 16413
> 16413 16413 16413
>
> Could anyone tell me what I am looking at here? Where are bits 1-3,
> etc? Do I need to do some conversion? I tried some of the stuff at:
>

Howard,
Try using ISHFT to create a mask that you will use to determine (by using a bitwise AND) if/where given bits are set:
Taking your example for the 2-'cloud' bit:
> cloudmask = ISHFT(1,2)
> cloudy = FEATURE_CLASSIFICATION_FLAGS AND cloudmask
The resulting "CLOUDY" variable will be nonzero where the 2-'cloud' bit is set.
combine with other bits as needed.
cheers
dave