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Subject: Re: Reading GE MRI data off 1/2" tapes  
Posted by [Liam Gumley](#) on Thu, 19 Aug 1999 07:00:00 GMT  
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David Foster wrote:

> Problem:  
>  
> Cannot read General Electric Signa 3.x/4.x MRI data off  
> 9-track 1/2" tapes.  
>  
> The program I am writing is in Fortran (historical reasons, of course);  
> I have tried using the Sun f77 topen,tread... routines, but these are  
> record-oriented and don't work in this case. I've tried opening the  
> tape device with open(...,form='unformatted') and can read the first  
> file on tape, the label. But I cannot seem to get past the first file  
> marker (tried mt, tskip).  
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> These tapes seem to be in a "unique" format, as a third-party program  
> that is used to read files off of these tapes (sorry, can't remember  
> the name, the folks I'm consulting for tried using it) doesn't work  
> with them.  
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> Any pointers, hints, or code, in \*whatever\* language, would be  
> greatly appreciated. I am getting desperate, as this project's  
> deadline has long since passed.  
>  
> I apologize if this is off-topic for this newsgroup; I'm trying to reach  
> an audience that is most likely to have experience with reading MRI  
> data off tapes. Not many of those posting to the Fortran newsgroups.

Hey Dave,

Did you try the tcopy command on that tape, e.g.

```
% tcopy /dev/rmt/xxx
```

where xxx is your tape device? In this mode, tcopy should scan the whole tape and display information about the sizes of all records and files on the tape. You might need to experiment with the different tape devices in /dev/rmt to find the right one.

If you can get this far, and the results make sense, then you can read the contents of the tape in IDL (on Unix), assuming the tape records are of fixed length:

```
file = '/dev/rmt/xxx'  
openr, lun, file, /get_lun, /nostdio  
recsize = 16384 ; or whatever size record
```

```
record = bytarr(recsize)
transfer_count = recsize
nrecords = 0
while transfer_count eq recsize do begin  ; should quit at end-of-file
  readu, lun, record, transfer_count=transfer_count
  nrecords = nrecords + 1
endwhile
free_lun, lun
print, 'Records read: ', nrecords
```

Cheers,  
Liam.

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Liam E. Gumley  
Space Science and Engineering Center, UW-Madison  
<http://cimss.ssec.wisc.edu/~gumley>

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Subject: Re: Reading GE MRI data off 1/2" tapes  
Posted by [David Clunie](#) on Fri, 20 Aug 1999 07:00:00 GMT  
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Hi Dave

It is a long time since I did this format, but the details  
are documented by GE ... see the alt.image.medical FAQ at:

<http://idt.net/~dclunie/medical-image-faq/html/>

for details and document references, and my notes on the  
subject.

Trying to get the files off the tape from within a program  
is way hard ... much easier to use the unix command line  
utilities to extract individual "files" separated by tape  
marks, eg.

```
mt -f /dev/nrmt0 rewind
dd if=/dev/nrmt0 of=file1 ibs=8192
dd if=/dev/nrmt0 of=file2 ibs=8192
...
```

obviously one can script this until dd reports error or  
the extracted size is zero, etc.

Note the block size ... from memory it is 8k on the GE  
tapes but you may need to experiment. Also use the no

rewind device or you will keep getting the same file over again :)

Once you have the files, you will need to decipher them. The dicom3tools at my web site have various utilities to help with this. I haven't used 3X or 4X format for a while so you probably need the older tools, rather than the current work in progress snapshot.

david

David Foster wrote:

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> Thanks!

>

> Dave Foster

>

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>

> ~~~~~  
> David Foster    National Center for Microscopy and Imaging Research  
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> (858) 534-7968    <http://www-ncmir.ucsd.edu/>

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Subject: Re: Reading GE MRI data off 1/2" tapes  
Posted by [Nigel Wade](#) on Fri, 20 Aug 1999 07:00:00 GMT  
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David Foster wrote:

 $\vee$ 

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 $\succ$ 

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 $\vee$ 

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 $\triangleright$ 

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 $\succ$ 

> Thanks!

 $\sim$ 

> Dave Foster

 $\vee$  $\geq \dots$ 

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~~~~~

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> dfoster@ucsd.edu UCSD/Department of Neuroscience  
> (858) 534-7968 http://www-ncmir.ucsd.edu/  
> ~~~~~

Unfortunately, FORTRAN is not a good language for doing this sort of thing.

It requires additional, system dependent, support to be able to read data from external storage devices, especially if the data were not written by FORTRAN.

The actual format of FORTRAN UNFORMATTED data is system dependent. All it really means is that the data should be stored in binary rather than text.

What often happens is that each record is preceded by an arbitrary sized byte count, and maybe terminated with the same. If the data was not generated by the same FORTRAN as you are reading it with you probably will not be able to read the data as UNFORMATTED.

What you have to do is delve into the system dependant IO routines. If you are using UNIX you need to use the system calls (NOT FORTRAN calls) of open/read to access the device. The easiest way to do this is to have a library of tape handling routines written in C, and then provide a FORTRAN callable wrapper for each of these. As it happens...

Well, yes, actually I do have a library of routines for reading tapes which work on Solaris and IRIX. You are welcome to a copy if you would like them.

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Subject: Re: Reading GE MRI data off 1/2" tapes  
Posted by [pln](#) on Sat, 21 Aug 1999 07:00:00 GMT  
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Several years ago I wrote a program called tapemap which is quite useful in figuring out the contents of unknown mag tapes. It scans the tapes, counting files and records and keeping track of their sizes. It will print samples of records in ASCII, EBCDIC, or hex. I just posted links on my home page:

<http://giants.stanford.edu/~pln>

This program was inspired by a similar one that existed on an IBM mainframe.

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