
Subject: Re: Changing File Size with OPENU?

Posted by [Wayne Landsman](#) on Mon, 27 Oct 1997 08:00:00 GMT

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William Thompson wrote:

>
> Wayne:
>
> I confirm this behaviour in IDL/v4.0.1 on a DEC Alpha workstation running
> OSF/v4, including the difference in behavior when the "print,fstat(lun)" line
> is uncommented. I can't see how a simple print statement to the terminal
> screen could be expected to affect file I/O, so it must be a bug.
>
> Have you tried writing something other than zeroes to the file? Do the bytes
> go where you expected them to, or to some other location. Is the file simply
> padded out with extra unwanted zeroes, with random values, or with data?
>

What appears to be happening is that the WRITEU statement does not begin writing at the current position in the file, but first skips 8192 bytes. If I was working under VMS, with its complicated file structure, I would blame this behaviour on some sort of record boundary. But since it occurs with Unix files, there must be an internal IDL bug in the way that WRITEU works on files opened with OPENU.

--Wayne Landsman
landsman@mpb.gsfc.nasa.gov

Subject: Re: Changing File Size with OPENU?

Posted by [thompson](#) on Mon, 27 Oct 1997 08:00:00 GMT

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Wayne:

I confirm this behaviour in IDL/v4.0.1 on a DEC Alpha workstation running OSF/v4, including the difference in behavior when the "print,fstat(lun)" line is uncommented. I can't see how a simple print statement to the terminal screen could be expected to affect file I/O, so it must be a bug.

Have you tried writing something other than zeroes to the file? Do the bytes go where you expected them to, or to some other location. Is the file simply padded out with extra unwanted zeroes, with random values, or with data?

Bill

=====
=====

Wayne Landsman <landsman@mpb.gsfc.nasa.gov> writes:

```
> I always thought that when opening a file with OPENU that the file
> wouldn't
> change size, unless one wrote past the end of the file. But below I
> give an
> example of a file changing size, even though I never reached the end of
> the
> file.
```

```
> I suspect this might be a IDL (or Solaris 2.6) bug, because if I
> uncomment the
> ;print,fstat(lun) line below, then the file size stays unchanged. But
> I
> don't trust my thought process right now after spending 3 hours trying
> to track
> down this bug. Anybody know if the behaviour in the example below is
> expected?
```

```
> --Wayne Landsman
> landsman@mpb.gsfc.nasa.gov
```

```
> ; IDL Version 5.0.2 (sunos sparc)
```

```
> ;Create a 250000 byte file
```

```
> openw,lun,'tester.dat',/get_lun
> writeu,lun,bytarr(250000)
> close,lun
```

```
> ;Make sure it really is 250000 bytes
```

```
> spawn,'ls -l tester.dat'
> ;-rw-r--r--  1 landsman  250000 Oct 26 08:13 tester.dat
```

```
> ;Now open file for update and move
> ; 14400 + 2400 + 230000 = 246800 bytes into the file
```

```
> openu,lun,'tester.dat'
> point_lun,lun,14400 ;Offset to 14400 bytes
> b = bytarr(2400)
> readu,lun,b ;Now read 2400 bytes
> ;print,fstat(lun)
> writeu,lun,bytarr(230000) ;Now write 230000 bytes
> free_lun,lun
> spawn,'ls -l tester.dat' ;And file has changed size!!
```

> -rw-r--r-- 1 landsman 254992 Oct 26 08:13 tester.dat

Subject: Re: Changing File Size with OPENU?

Posted by [Peter Mason](#) on Tue, 28 Oct 1997 08:00:00 GMT

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On Tue, 28 Oct 1997, Peter Mason wrote:

<...>

> So, anyway, when changing from a read to a write (or vice versa) on the
> same file unit, you should always do something like:
> POINT_LUN, -lun, junk

Sorry, this won't work as it's just equivalent to C's ftell().

What you need is:

POINT_LUN,-lun,junk & POINT_LUN,lun,junk

Peter Mason

Subject: Re: Changing File Size with OPENU?

Posted by [Jack Saba](#) on Tue, 28 Oct 1997 08:00:00 GMT

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I get the same behavior under both IDL 4 and IDL 5.0.2. However, when I removed the READU, and changed the point_lun to

POINT_LUN, LUN, 14400+2400

the final file size was the same as the initial file size.

--

Jack Saba <jack@magus.stx.com>

Wayne Landsman wrote:

>

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>
> --Wayne Landsman
> landsman@mpb.gsfc.nasa.gov
>
> ; IDL Version 5.0.2 (sunos sparc)
>
> ;Create a 250000 byte file
>
> openw,lun,'tester.dat',/get_lun
> writeu,lun,bytarr(250000)
> close,lun
>
> ;Make sure it really is 250000 bytes
>
> spawn,'ls -l tester.dat'
> ;-rw-r--r--  1 landsman  250000 Oct 26 08:13 tester.dat
>
> ;Now open file for update and move
> ; 14400 + 2400 + 230000 = 246800 bytes into the file
>
> openu,lun,'tester.dat'
> point_lun,lun,14400 ;Offset to 14400 bytes
> b = bytarr(2400)
> readu,lun,b ;Now read 2400 bytes
> ;print,fstat(lun)
> writeu,lun,bytarr(230000) ;Now write 230000 bytes
> free_lun,lun
> spawn,'ls -l tester.dat' ;And file has changed size!!
>
> -rw-r--r--  1 landsman  254992 Oct 26 08:13 tester.dat

```

Subject: Re: Changing File Size with OPENU?

Posted by [Peter Mason](#) on Tue, 28 Oct 1997 08:00:00 GMT

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On Mon, 27 Oct 1997, Wayne Landsman wrote:

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> file.
>
> I suspect this might be a IDL (or Solaris 2.6) bug, because if I uncomment
> the ;print,fstat(lun) line below, then the file size stays unchanged.
> Anybody know if the behaviour in the example below is expected?
<example cut>

The size change also happens on Digital Unix 4.0A with IDL 4.0.1 (and earlier versions).

I wasn't surprised by this behaviour in IDL, having first been totally freaked out by it in the C world. (I found out about it the hard way.) In C, you have to do a fseek() or fflush() in between changing from a read to a write (or vice versa) on the same streamed file unit, otherwise things just go wrong. (At least C documentation on fopen() usually points this out.)

IDL's normal I/O routines are based on C routines, and I guess that this is why they have the same problem. (IDL's POINT_LUN is equivalent to a fseek()). Also, I guess that FSTAT() incorporates a seek.) It would be nice if the IDL docs mentioned this somewhere.

So, anyway, when changing from a read to a write (or vice versa) on the same file unit, you should always do something like:

POINT_LUN, -lun, junk
or, as you've tried, an FSTAT(),
or possibly FLUSH,lun.

Peter Mason
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